TC-K75

AEP Model
UK Model
US Model
Canadian Model
E Model

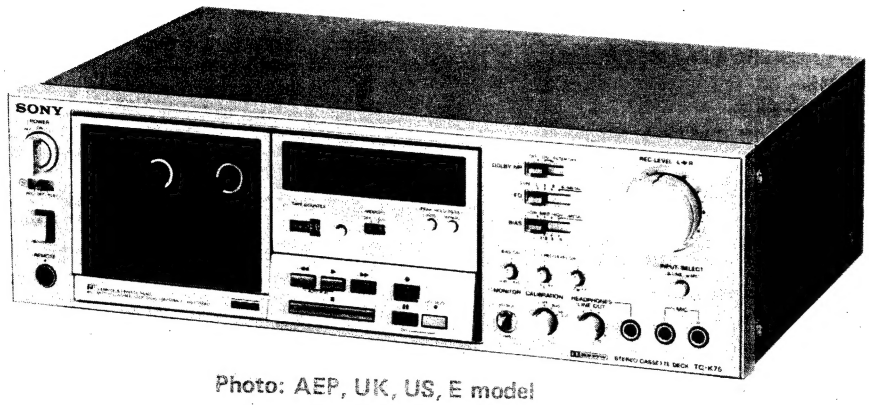


Photo: AEP, UK, US, E model

'Dolby' and the double-D symbol are the trade marks of Dolby Laboratories. Noise reduction system manufactured under license from Dolby Laboratories.

STEREO CASSETTE DECK

SPECIFICATIONS

GENERAL

Power Requirements:
AEP model
220V ac ~, 50/60 Hz
(240V ac ~ adjustable by authorized Sony personnel)
UK model
240V ac ~, 50/60 Hz
(220V ac ~ adjustable by authorized Sony personnel)
US, Canadian model
120V ac, 60 Hz
E model
110, 120, 220 or 240V ac ~, 50/60 Hz

Power Consumption: 28W (AEP, UK, E model)
26W (US, Canadian model)

Dimensions: Approx. 430(w) x 130(h) x 290(d) mm
17(w) x $5^1/_8$(h) x 11½(d) inches
(AEP, UK, US, E model)
Approx. 460(w) x 130(h) x 290(d) mm
$18^1/_8$(w) x $5^1/_8$(h) x 11½(d) inches
(Canadian model)
including projecting parts and controls

Weight: Approx. 6.3kg, 13 lb 14 oz (AEP, UK, US, E model)
Approx. 7kg, 15 lb 7 oz (Canadian model)

— Continued on page 2 —

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ !

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE ⚠ SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DES SUPPLÉMENTS PUBLIÉS PAR SONY.

Tape Transport Mechanism Type	TCM-100V2	
	Specification	**Test Equipment**
Forward Torque	28–43 g·cm (0.39–0.59 oz·inch)	Sony torque meter CQ-102
Back Tension Torque	2.5–4.5 g·cm (0.04–0.06 oz·inch)	Sony torque meter CQ-102
Pinch Roller Pressure	• Take-up Side 280–380 g (10–13 oz) • Supply Side 180–280 g (7–10 oz)	Spring scale or tension gauge

SONY

SERVICE MANUAL

TAPE RECORDER SECTION

Recording System: 4-track 2-channel stereo

Fast-forward and Rewind Time: Approx. 80 sec. (with C-60)

Frequency Response: DOLBY NR OFF

AEP, UK, E model

- With TYPE IV cassette (Sony METALLIC)
  20–20,000 Hz
  30–18,000 Hz (±3 dB)
  30–13,000 Hz (±3 dB, 0 VU recording)
  30–18,000 Hz (DIN)
- With TYPE III cassette (Sony Fe-Cr)
  20–20,000 Hz
  30–18,000 Hz (±3 dB)
  30–18,000 Hz (DIN)
- With TYPE II cassette (Sony CD-α)
  20–19,000 Hz
  30–17,000 Hz (±3 dB)
  30–17,000 Hz (DIN)
- With TYPE I cassette (Sony BHF)
  20–17,000 Hz
  30–15,000 Hz (±3 dB)
  30–15,000 Hz (DIN)

US, Canadian model

- With TYPE IV cassette (Sony METALLIC)
  20–20,000 Hz
  30–18,000 Hz (±3 dB)
  30–13,000 Hz (±3 dB, 0 VU recording)
- With TYPE III cassette (Sony Fe-Cr)
  20–20,000 Hz
  30–18,000 Hz (±3 dB)
- With TYPE II cassette (Sony EHF)
  20–19,000 Hz
  30–17,000 Hz (±3 dB)
- With TYPE I cassette (Sony HFX)
  20–17,000 Hz
  30–15,000 Hz (±3 dB)

Wow and Flutter: 0.04% WRMS (NAB)
±0.14% (DIN) } (AEP, UK, E model)

0.04% WRMS (US, Canadian model)

S/N Ratio: DOLBY NR OFF

AEP, UK, E model

- With TYPE III cassette (Sony Fe-Cr)
  60 dB at peak level (NAB)
  59 dB (DIN, 1975, rev.)
- With TYPE II cassette (Sony CD-α)
  58 dB at peak level (NAB)

US, Canadian model

- With TYPE III cassette (Sony Fe-Cr)
  60 dB at peak level
- With TYPE II cassette (Sony EHF)
  58 dB at peak level

DOLBY NR ON
Improved by 5 dB at 1 kHz, 10 dB above 5 kHz

Total Harmonic Distortion: 0.8% (with Sony Fe-Cr cassette)

Bias Frequency: 105 kHz

Inputs: Microphone inputs (phone jacks) 2
sensitivity 0.25 mV (–70 dB)
for a low-impedance microphone
Line inputs (phono jacks) 2
sensitivity 77.5 mV (–20 dB)
input impedance 50 kΩ

Outputs: Variable line outputs (phono jacks) . . 2
output level 0.435 V (–5 dB)
at load impedance 50 kΩ
with LINE OUT level control at "10"
suitable load impedance more than 10 kΩ
Fixed line outputs (phono jacks) 2
output level 0.435 V (–5 dB)
at load impedance 50 kΩ
Suitable load impedance more than 10 kΩ
Headphone output 1
output level –20 to –50 dB
at load impedance 8 Ω

LED PEAK PROGRAM METERS

Response Range: –40 dB to +8 dB

Frequency Response: 20 Hz –20,000 Hz ±1.5 dB

Response Time: 1 millisecond

Decay Time (from 0 dB to –20 dB): 750 milliseconds

Overshoot: None

Indicator Elements: 16 elements for each channel

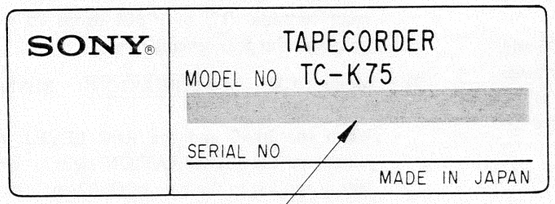
0 dB = 0.775 V

SERVICING NOTE

When the top cover is removed, the internal photo transistor may pick up stray light and shut the set off.

MODEL IDENTIFICATION

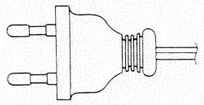
– Specification Label –



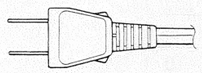
US, Canadian Model:	AC 120V 60Hz 26W
AEP model:	AC 220V~ 50/60Hz 28W
UK model:	AC 240V~ 50/60Hz 28W
E model:	AC 110, 120, 220, 240V~ 50/60Hz 28W

– Power Cord –

E model: euro-plug 1-534-817-XX



E model: parallel-blade plug 1-551-473-31



Handling Precautions for MOS ICs

Generally, the insulation resistance of the oxide layer in MOS IC structures is very high, and the oxide layer is very thin. Because of this, it is possible that the static voltages usually present on clothes and the human body will be enough to generate a potential difference across the insulator, high enough to cause a breakdown of the insulating layer.

The following precautions should be taken while handling these ICs.

(Particular care should be taken under conditions of low humidity.)

Precautions in Replacing MOS ICs

1. Store new ICs by inserting them into a urethane-polyester cushion (which is somewhat conductive), or wrapping it in aluminum foil, so that all the pins are at the same potential.
   (The ICs should be stored in that manner until mounted on the circuit board.)

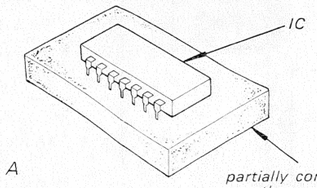


Fig. A

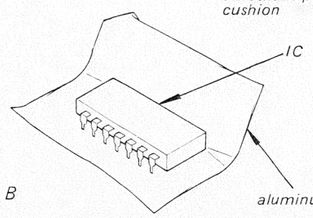


Fig. B

2. Check the soldering iron for possible power-line leakage current. Make sure that there is no leakage path by connecting an ohmmeter to the tip of the soldering iron and the plug as shown in Fig. C. If there is a leakage path, use some other soldering iron.

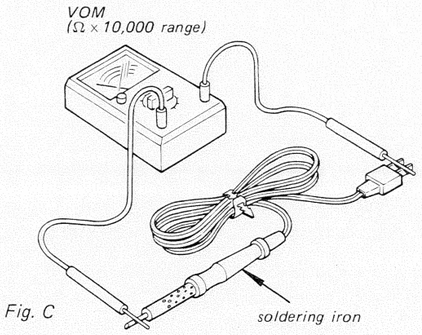


Fig. C

3. Equalize any potential difference between the clothes, the tools in use, the work bench, the set being worked on, and the packaged IC by touching them all in succession with the hands or a conductive wire or tool.
4. The following are effective methods for handling ICs that remove the potential difference across the oxide layer.
   - Use a paper clip modified by soldering in a wire braid insert.

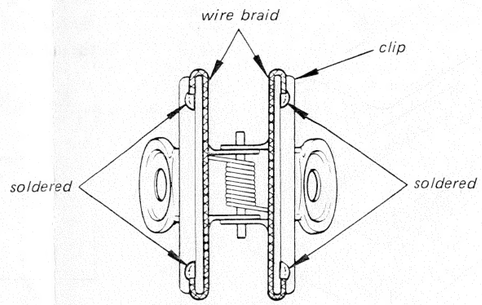


Fig. D Make sure that there is no solder on the inside.

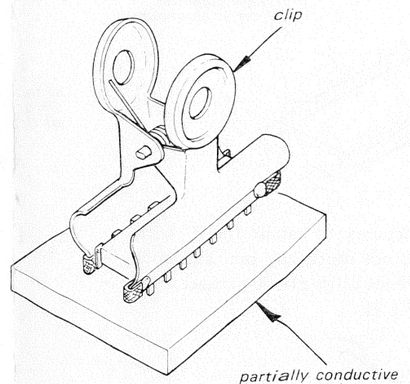
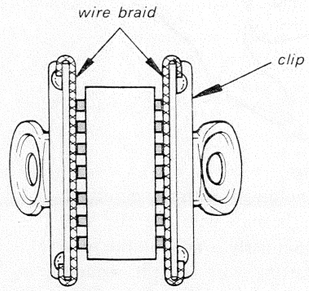


Fig. E



Make sure that all the pins are in contact with the wire braid (all the pins will then be at the same potential.).

Fig. F

- Take a short length of fine bare wire and wind it around the IC so that it shorts all the pins of the IC, while it is still in the urethane-polyester cushion or aluminum foil. This ensures that all the pins are at the same potential.

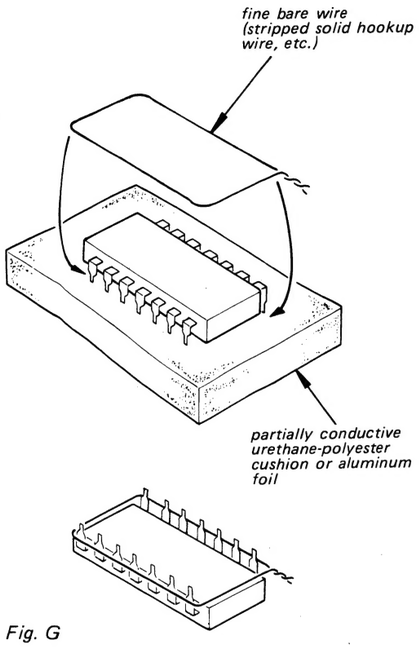


Fig. G

- When it is necessary to handle the IC with the fingers, do not touch any pin, and hold the IC at the ends of its plastic-package case as shown in Fig. H.

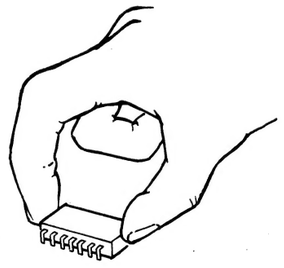


Fig. H

5. Method of Mounting
Insert the IC while holding it with the modified clip, and solder all the pins with the clip still shorting the pins. (Similarly, solder all the pins while the bare shorting wire is still wound around them.). Remove the clip or the bare shorting wire only after all the pins have been soldered.

Precaution while Checking C-MOS ICs

The C-MOS ICs (Complementary MOS) are MOS ICs that have their output sections made up of N-channel and P-channel push-pull stages to increase their speed of operation. If the output terminal of these ICs comes into contact with B+ or B– voltage, then the FET which is ON at that time will either become shorted or open.

This is valid for all the output sections that are connected together by the interconnections. Even the circuits that are physically separated (and not on the same board) can be destroyed simultaneously.

Example:

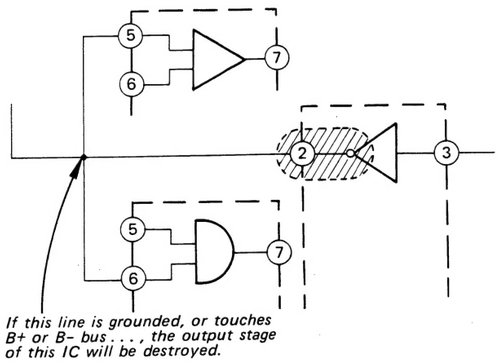


Fig. I

SECTION 1
OUTLINE

1-1. CIRCUIT OPERATION

This set is equipped with an LED peak program meter, which indicates the input signal level (as a bar graph).

The following explanations describe the operation of each of the circuit.

1. IC601 Input Circuit

Input signal Ⓐ (waveform Ⓐ) is amplified by Q106 and is applied to IC103 in the LOG converter circuit. By the characteristic of a diode, the input signal is logarithmically compressed and waveform Ⓐ changes into waveform Ⓑ.

The peak of signal Ⓑ is detected by D105 and smoothed by C132, Then it is applied to terminal (11) of IC601 as dc voltage (waveform Ⓒ). Q108 controls the input current which is applied to IC601.

2. LED Indication Circuit

The LEDs turn on when the anode and the cathode signals drop to a LOW level at the same time.

ex) LINE OUT output –5dB
Ⓓ, Ⓕ : LOW level
↓
waveform Ⓗ – Ⓞ : anode, cathode: LOW level
↓
L–CH/R–CH : LEDs 1~8 turn on
(See Diagram 1.)

LED MATRIX DIAGRAM

anode signal / cathode signal	L–CH		R–CH	
	Ⓓ	Ⓔ	Ⓕ	Ⓖ
Ⓗ	1	9	1	9
Ⓘ	2	10	2	10
Ⓙ	3	11	3	11
Ⓚ	4	12	4	12
Ⓛ	5	13	5	13
Ⓜ	6	14	6	14
Ⓝ	7	15	7	15
Ⓞ	8	16	8	16

Diagram 1.

(When either two of the signals Ⓓ – Ⓖ and of Ⓗ – Ⓞ drop to LOW level, the LEDs shown in the diagram turn on.)

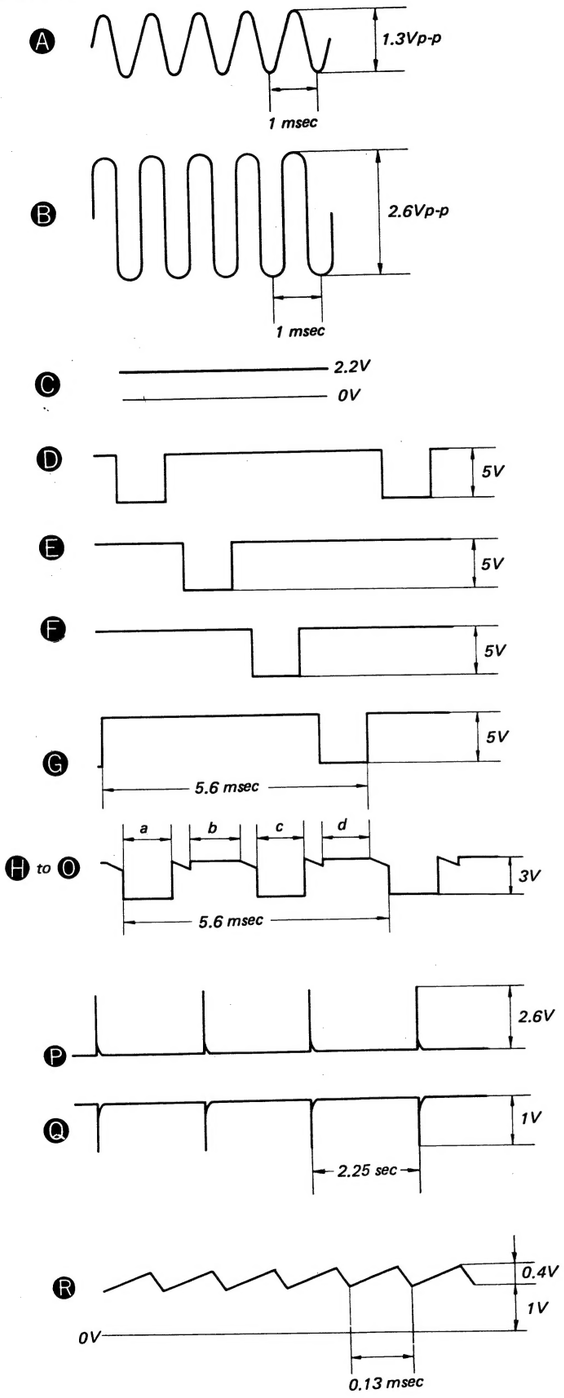
3. Peak Hold Reset Circuit

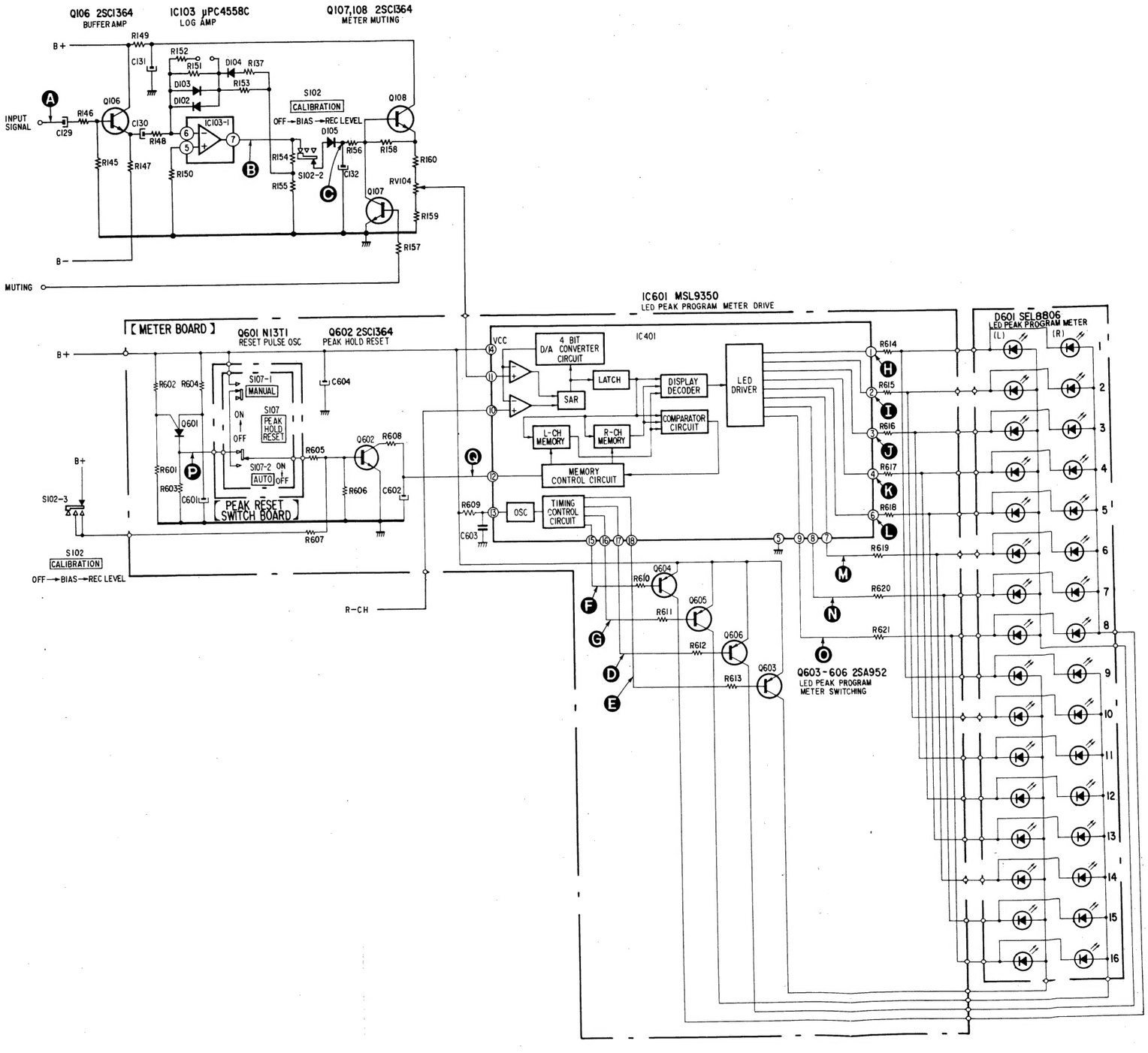
1) Mode: S107 [AUTO]
The trigger pulse generated by Q601 (PUT= Programmable Unijunction Transistor) is applied to the base of Q602. The reset signal is applied to the reset terminal (12) of IC601 at intervals of 2.25 seconds and the peak level is reset.

2) Mode: S107 [MANUAL]
When the MANUAL switch is turned on, B+ voltage is applied to the base of Q602. Then reset terminal (12) of IC601 drops to a LOW level and the peak level is reset.

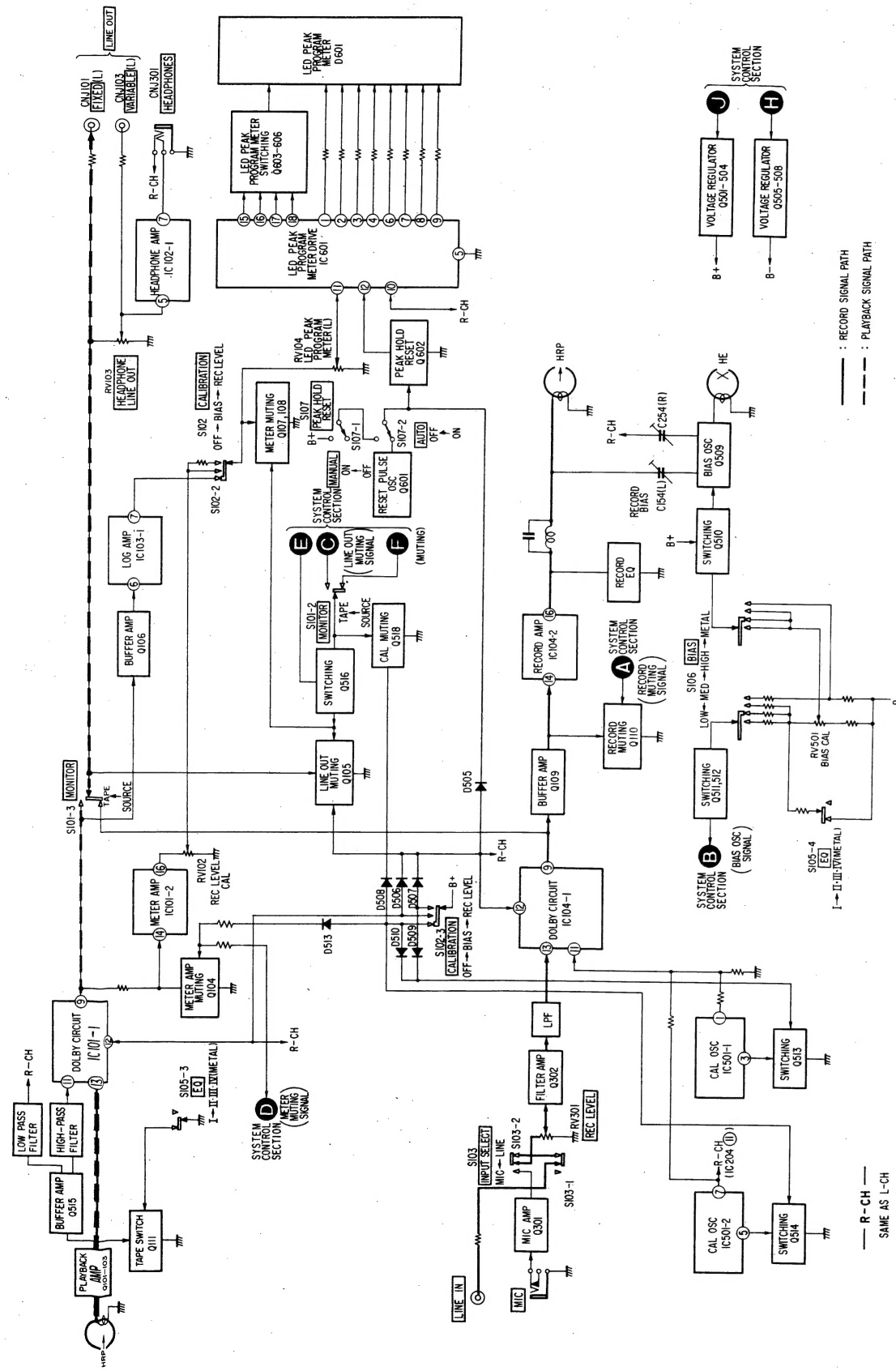
3) Mode: S102 [CALIBRATION] BIAS/REC LEVEL
When the BIAS and the REC LEVEL are adjusted by the CALIBRATION switch, B+ voltage is applied to the base of Q602 and the peak level (of the meter) is not indicated.

Measuring Condition
LINE IN: 1 kHz, 0.25V (–10 dB)
LINE OUT: 0.44V (–5 dB)
Mode: record/forward
MONITOR SWITCH: SOURCE

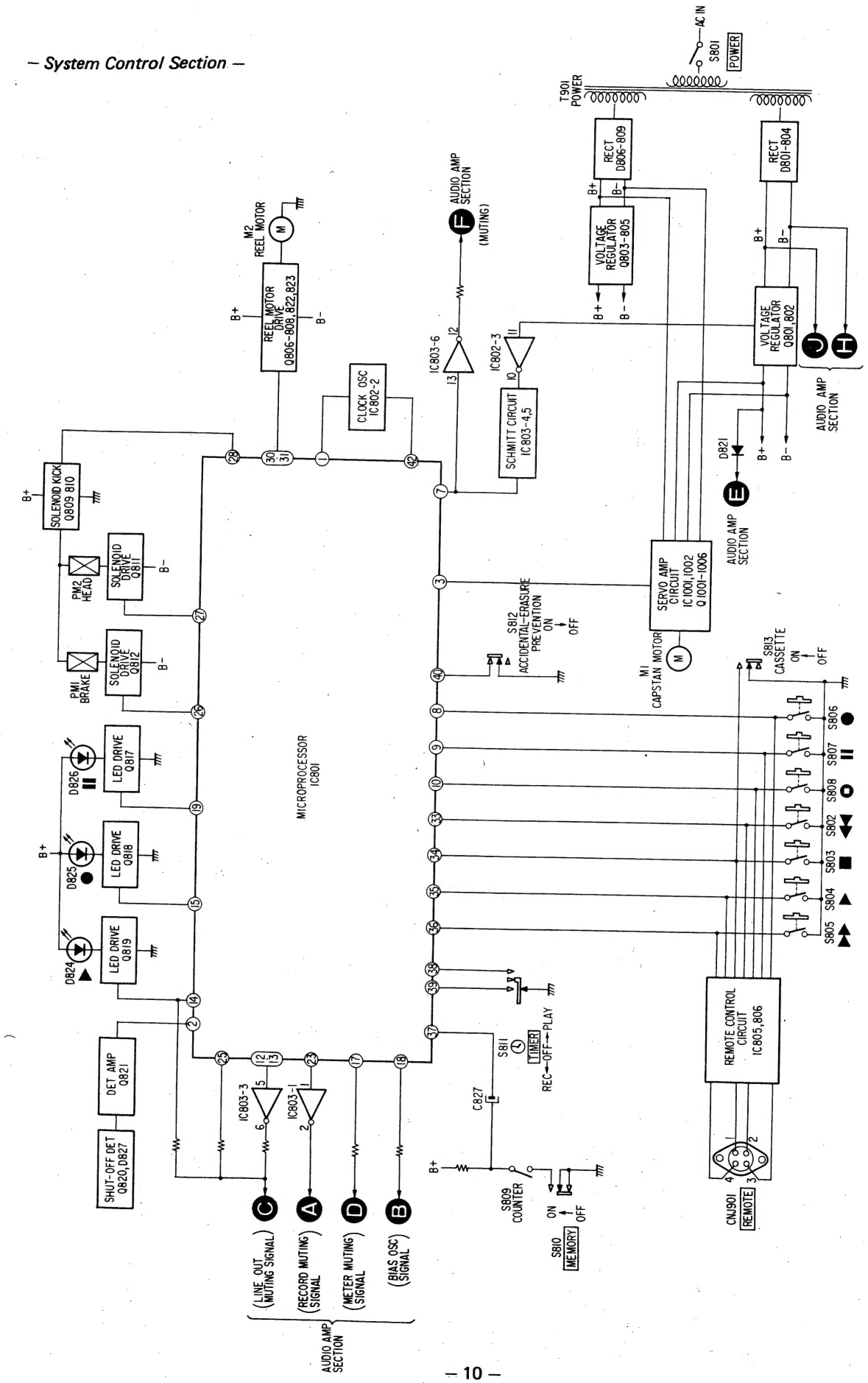




1-2. BLOCK DIAGRAM — *Audio Amp Section* —



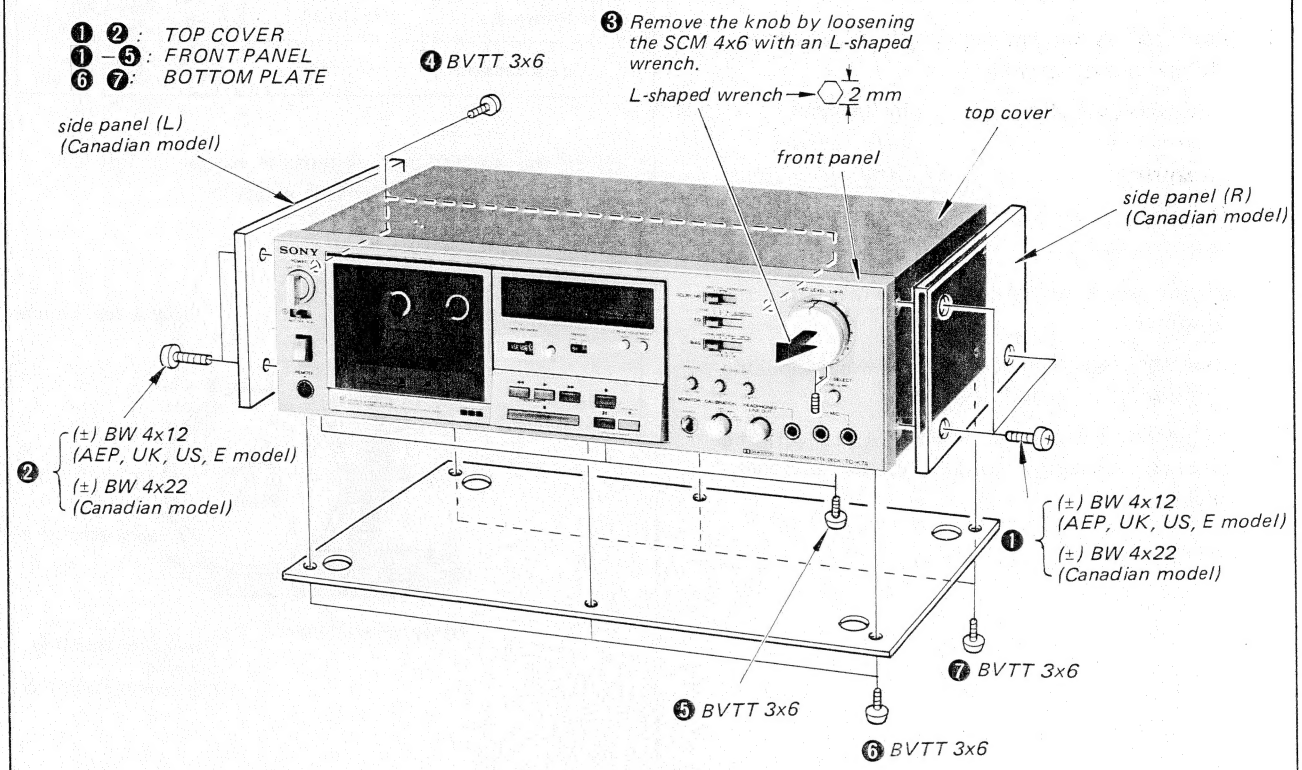
— *System Control Section* —



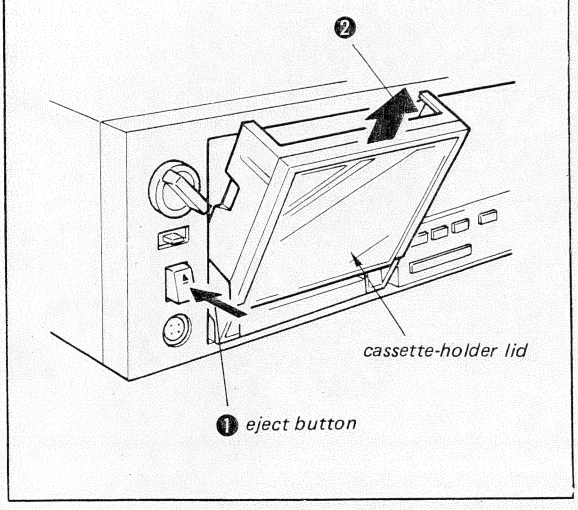
SECTION 2
DISASSEMBLY

- Follow the disassembly procedure in the numerical order given.

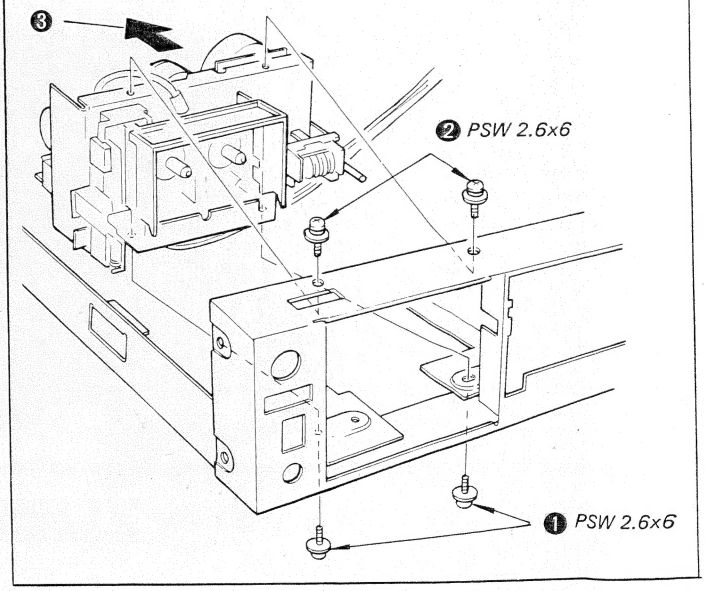
TOP COVER/FRONT PANEL/BOTTOM PLATE REMOVAL



CASSETTE–HOLDER LID REMOVAL



MECHANICAL BLOCK REMOVAL



SECTION 3
ADJUSTMENTS

3-1. MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch rollers
erase head	rubber belts
capstans	idlers

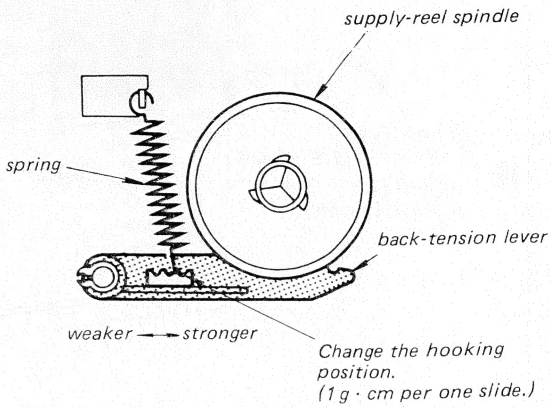
2. Demagnetize the record/playback head with a head demagnetizer.
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, apply suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

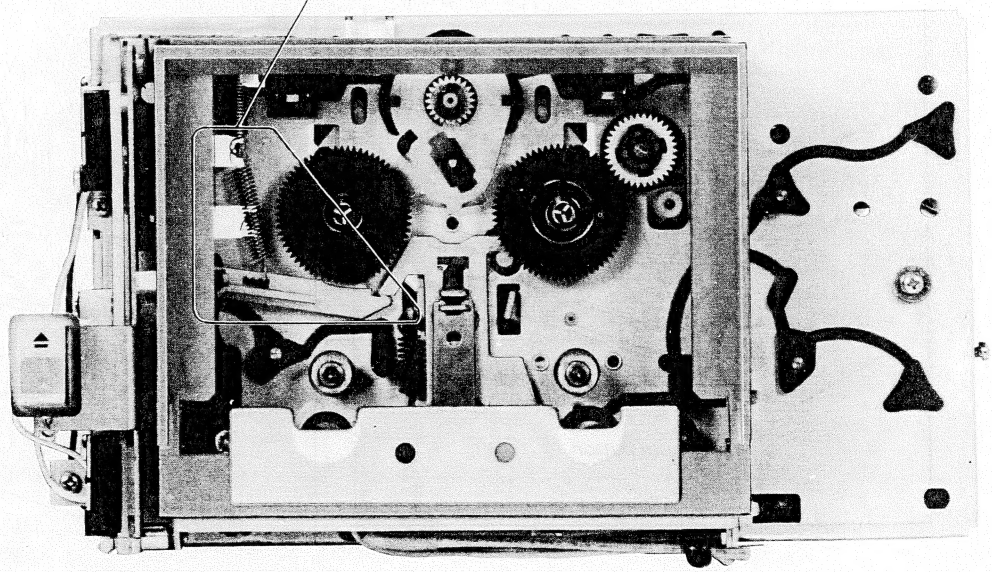
Torque Measurement and Back Tension Torque Adjustment

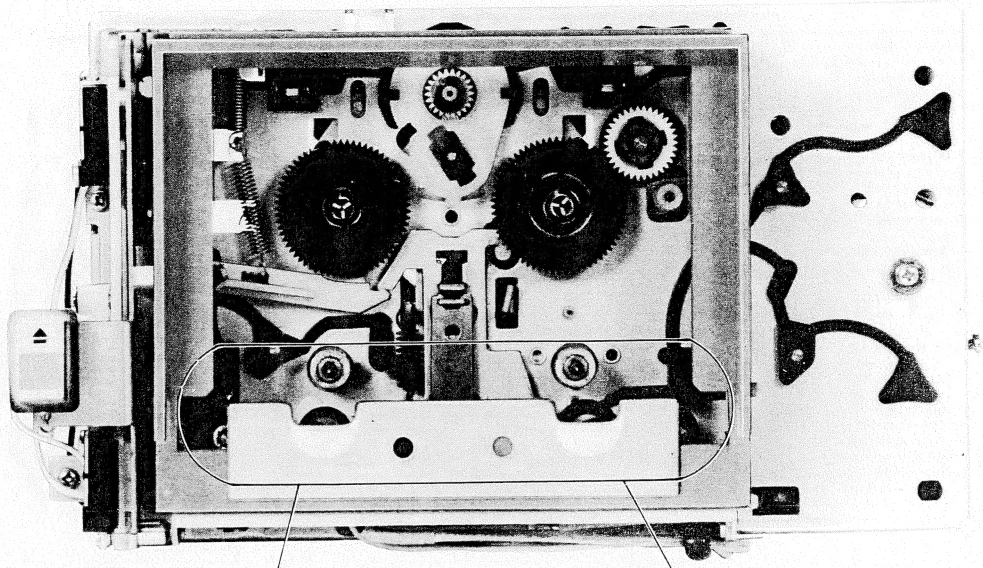
1.

Torque	Torque meter	Meter reading
Forward	CQ-102	28–43 g · cm (0.39–0.59 oz · inch)
Back tension	CQ-102	2.5–4.5 g · cm (0.04–0.06 oz · inch)

2. If the specified back-tension torque is not obtained, change the hooking position.

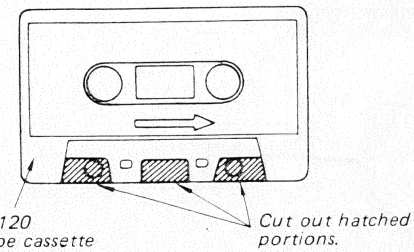




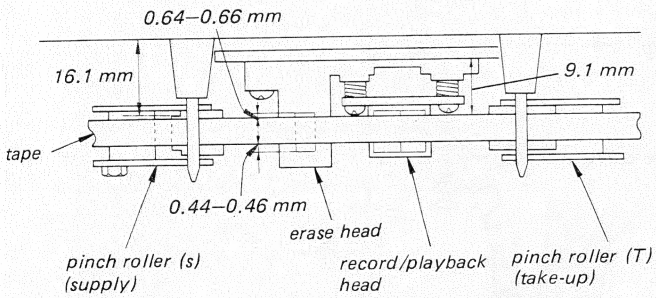


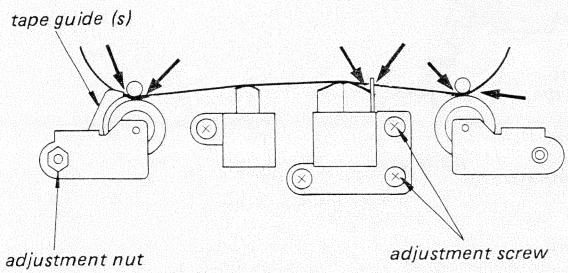
Head Height Adjustment

1. Prepare an adjustment cassette as shown below.



2. Inplayback mode and viewing from the front, adjust the head heights to eliminate tape curl and tape twist at portions shown by arrows.

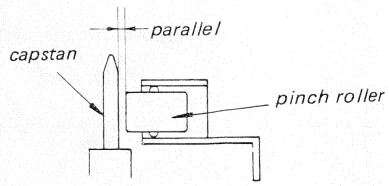




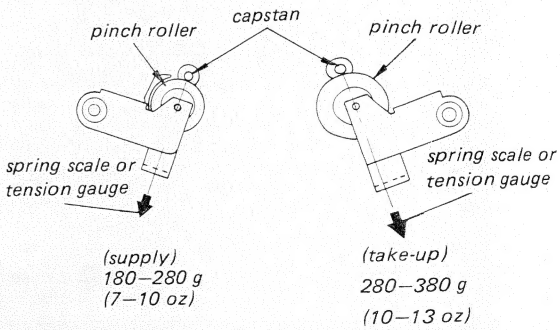
Pinch Roller Pressure Measurement

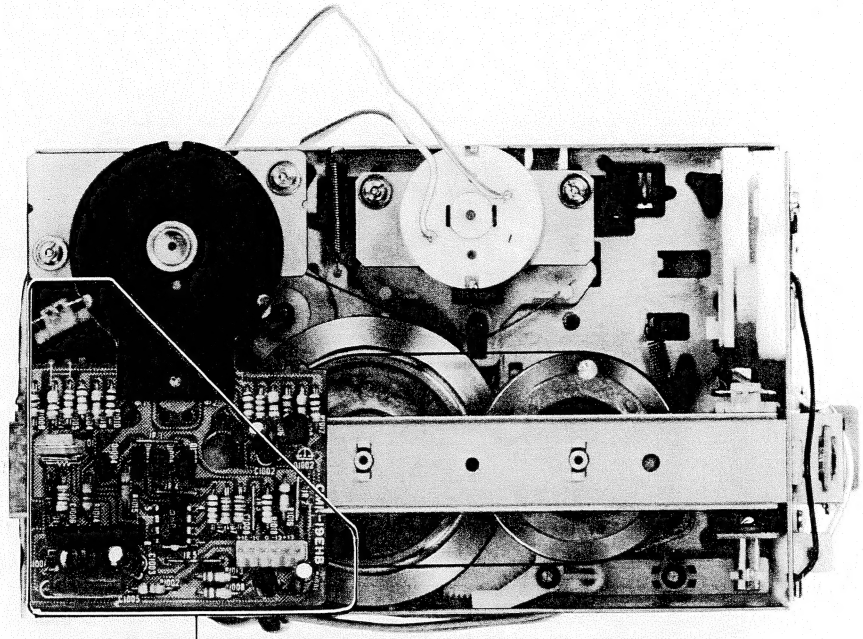
– Forward Mode –

1.



2. Slowly pull the pinch roller and read the spring scale or the tension gauge just when the pinch roller stops rotating.





Brake Solenoid (PM1) Position Adjustment

– Stop Mode –

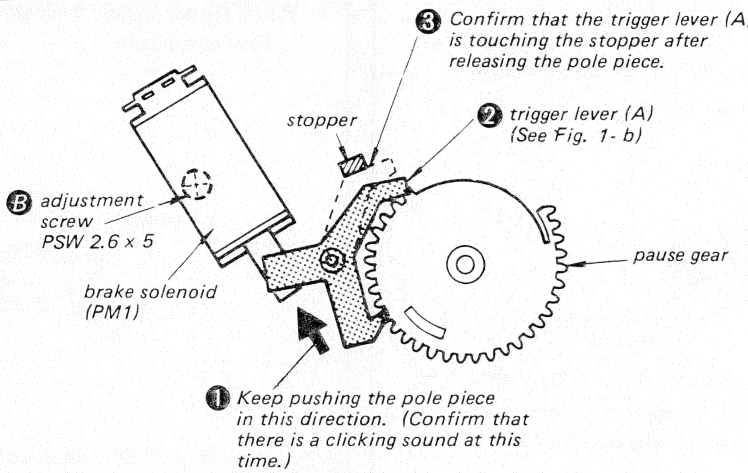


Fig. 1-a

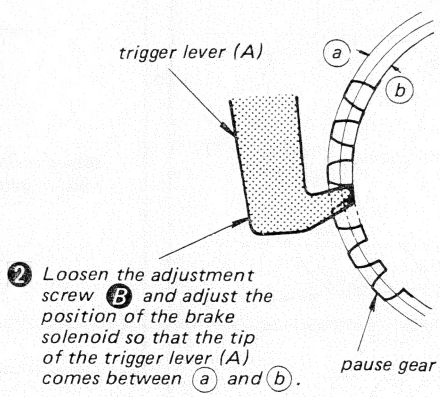
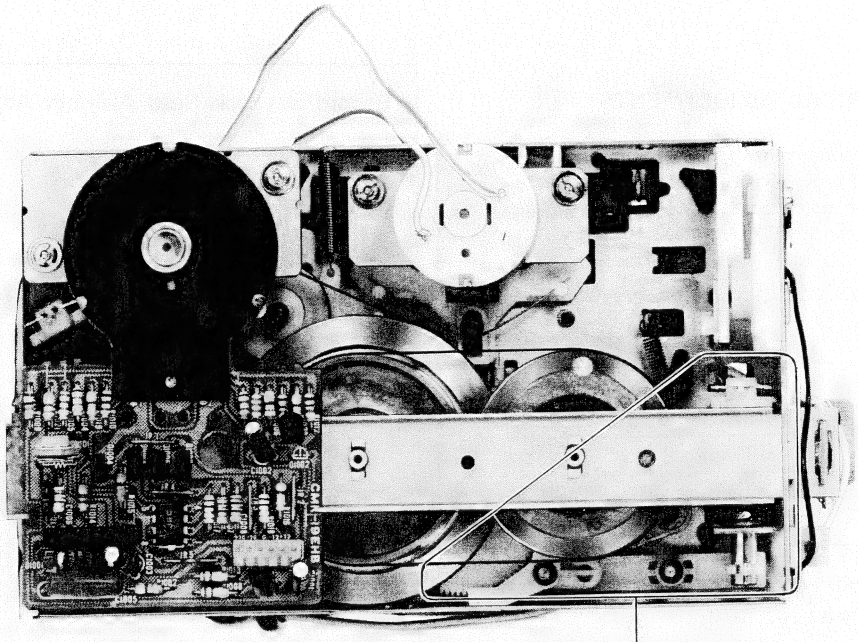


Fig. 1-b



Head Solenoid (PM2) Position Adjustment

– Stop Mode –

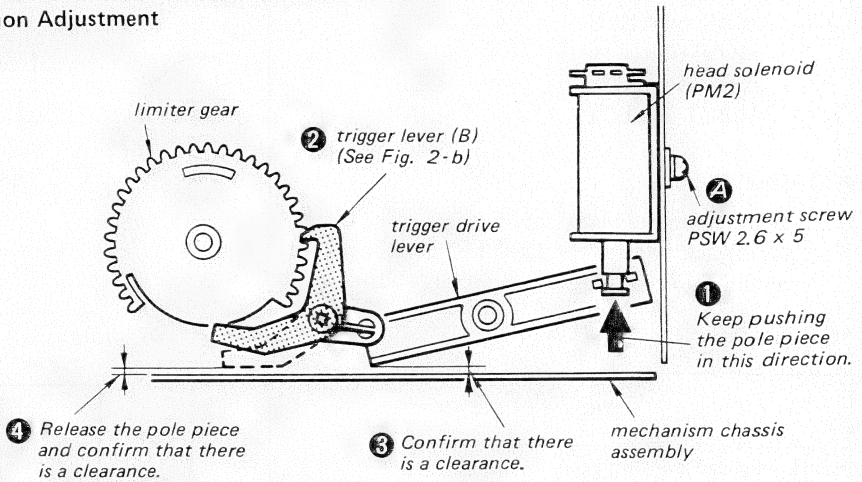


Fig. 2-a

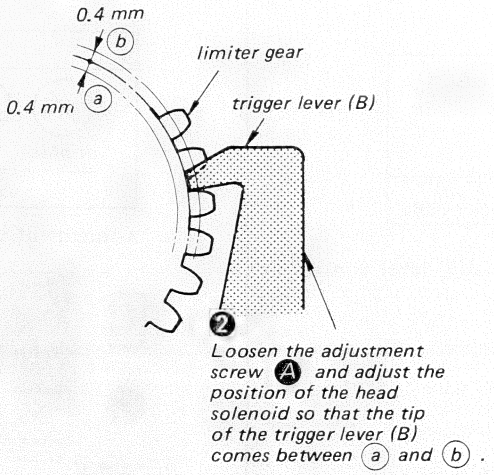


Fig. 2-b

3-2. ELECTRICAL ADJUSTMENTS

Note: The adjustment should be performed in the order given in this service manual. The adjustments should be performed for both L-CH and R-CH.

- Set the BIAS and EQ switches according to the tape as follows.

Tape	BIAS switch	EQ switch
CS-10	MED	TYPE I
CS-25	HIGH	TYPE II
CS-30	MED	TYPE III
CS-40	METAL	TYPE IV

- Switches and controls should be set as follows unless otherwise specified.

DOLBY NR switch:	OFF
EQ switch:	TYPE I
BIAS switch:	MED
MONITOR:	TAPE
CALIBRATION:	OFF
INPUT SELECT:	LINE

- Standard Record:

  Deliver the standard input signal level to the input jack and set the REC LEVEL control to obtain the standard output signal level.

Standard Input Level

	MIC	LINE IN
source impedance	300 Ω	10 kΩ
input level	0.77 mV (−60 dB)	0.25 V (−10 dB)

Standard Output Level

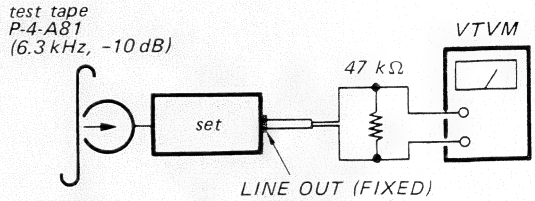
	LINE OUT (FIXED)	HEAD-PHONES
load impedance	47 kΩ	8 Ω
output level	0.44 V (−5 dB)	77 mV* (−20 dB)

* with HEADPHONES/LINE OUT level control at "10".

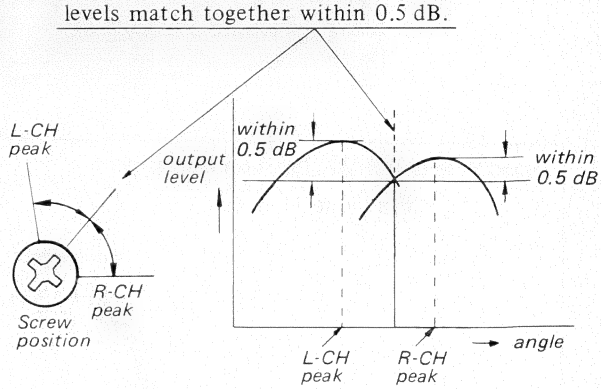
Record/playback Head Azimuth Adjustment

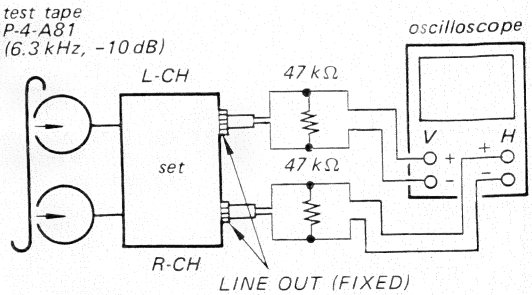
Procedure:

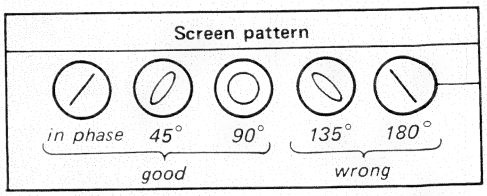
1. Mode: playback



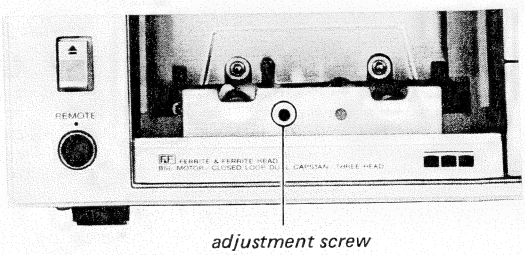
2. Turn the adjustment screw for the maximum output levels. If these levels do not match, turn the adjustment screw where both of output levels match together within 0.5 dB.







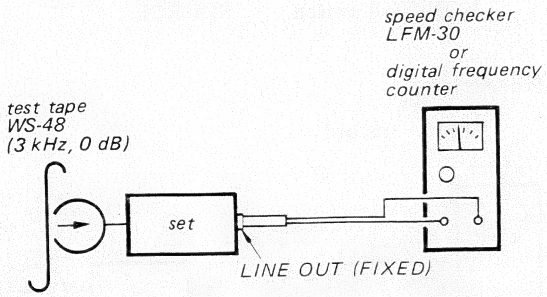
Adjustment Location:



Tape Speed Adjustment

Procedure:

Mode: playback



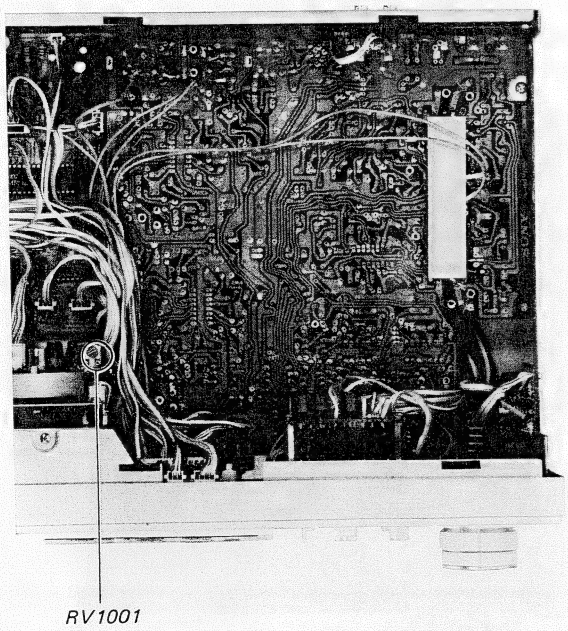
Specification:

Speed checker	Digital frequency counter
−0.7 to +0.7%	2,980 – 3,020 Hz

Frequency difference between the beginning and the end of the tape should be within 0.7% (20 Hz).

Adjustment Location:

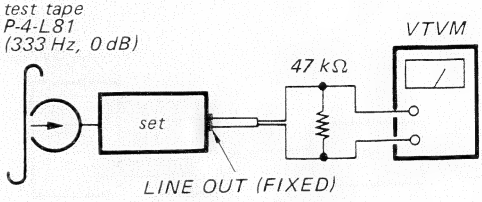
– servo amp board –



Playback Level Adjustment

Procedure:

Mode: playback



Specification:

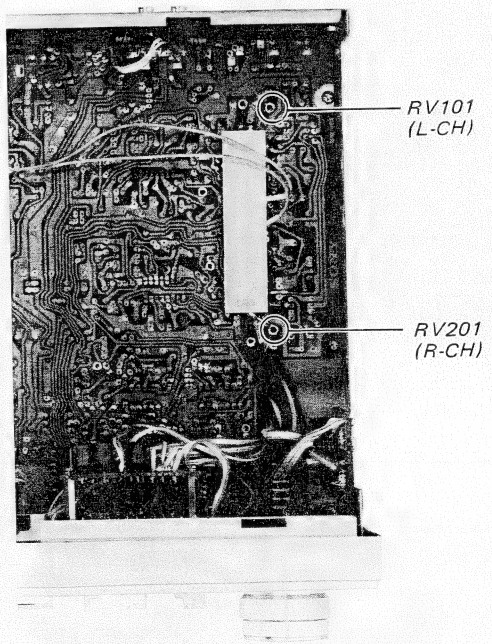
LINE OUT level: 0.52 – 0.59 V
(−3.5 to −2.5 dB)

Level difference between channels:
less than 0.5 dB

Check that LINE OUT level does not change in playback mode while changing the mode from playback to stop several times.

Adjustment Location:

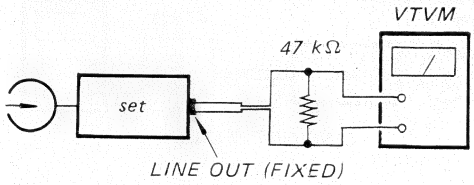
– record/playback board –



Bias Trap Adjustment

Procedure:

Mode: record (no-cassette loaded)

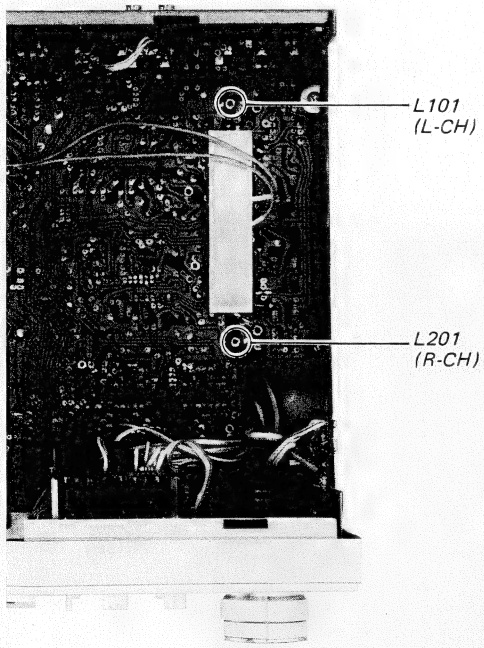


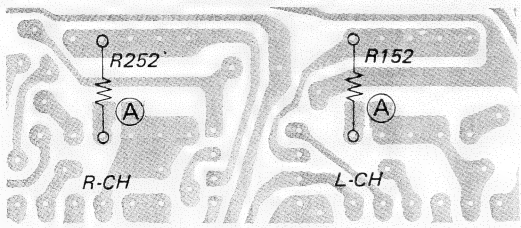
Specification:

LINE OUT level: less than 2.5 mV
(less than −50 dB)

Adjustment Location:

– record/playback board –





LED Peak Program Meter Calibration

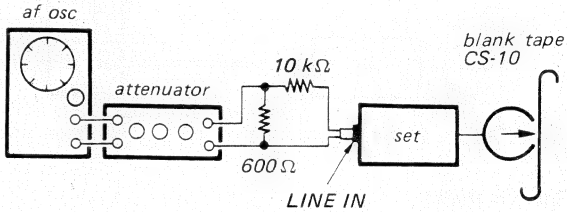
Setting:

REC LEVEL control: standard record
(See page 16.)

MONITOR switch: SOURCE

Procedure:

Mode: record



Slowly turn RV104 (L-CH) and RV204 (R-CH) and stop them just when the segments (, −2 dB) go out.

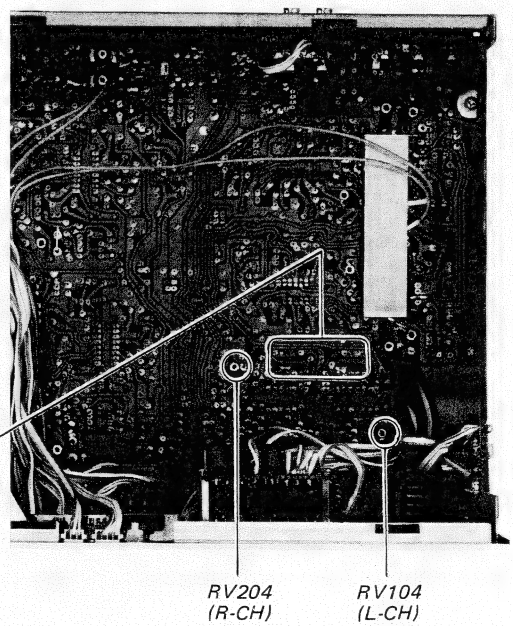
Specification:

LINE IN level	Indication
0.85 – 1.1 V (+1 to +3 dB)	The first segment from the right lights.
2.7 – 5.5 mV (−49 to −43 dB)	The second segment from the left goes out.

If the second segment from the left does not go out when the 2.7 mV (−49 db) LINE IN signal is applied, solder (A).

Adjustment Location:

– record/playback board –



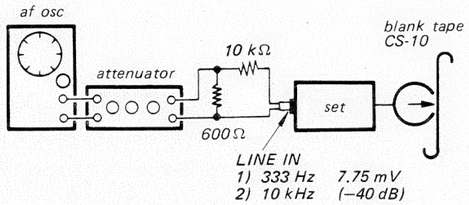
Record Bias Adjustment

Setting:

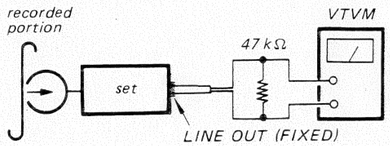
REC LEVEL control: standard record
(See page 16.)

Procedure:

1. Mode: record



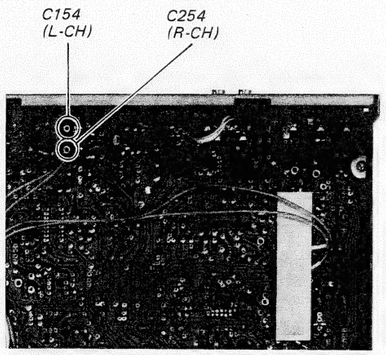
2. Mode: playback



Adjust C154 (L-CH) and C254 (R-CH) so that the 333 Hz and the 10 kHz signal levels become the same.

Adjustment Location:

– record/playback board –



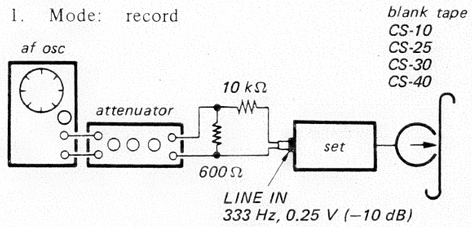
Record Level Adjustment

Setting:

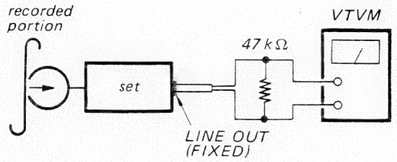
REC LEVEL control: standard record
(See page 16.)

Procedure:

1. Mode: record



2. Mode: playback

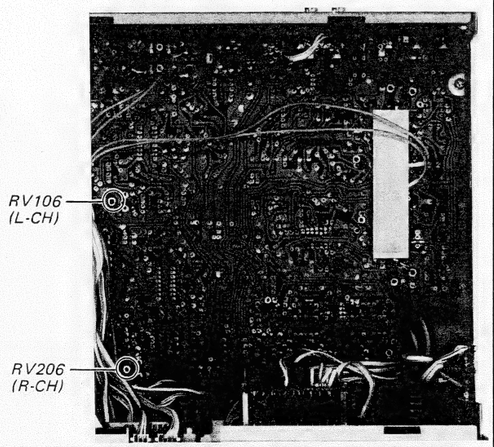


Specification:

Tape	LINE OUT level
CS-10	0.41 – 0.46 V (–5.5 to –4.5 dB)
CS-25 CS-30 CS-40	0.37 – 0.46 V (–6.5 to –4.5 dB)

Adjustment Location:

– record/playback board –



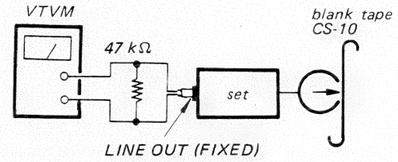
REC LEVEL CAL (calibration) Adjustment

Setting:

CALIBRATION switch: REC LEVEL

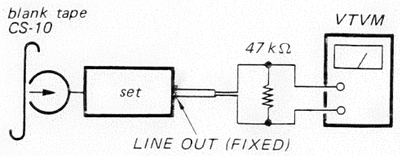
Procedure:

1. Mode: record
   MONITOR switch: SOURCE



Confirm that the LINE OUT level is 43–45 mV (–25.2 to –24.8 dB).

2. Mode: record and simultaneous playback
   MONITOR switch: TAPE



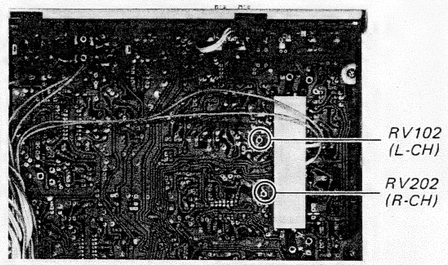
Confirm that the LINE OUT level is 42–47 mV (–25.5 to –24.5 dB).

3. Slowly turn RV102 (L-CH) and RV202 (R-CH) and stop them just when the second RED segments go out.

4. Confirm that the LINE OUT levels vary between 29–66 mV (–28.5 to –21.5 dB) according to the REC LEVEL CAL controls turning.

Adjustment Location

– record/playback board –



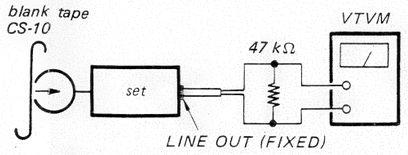
BIAS CAL (calibration) Measurement

Setting:

CALIBRATION switch: BIAS

Procedure:

1. Mode: record and simultaneous playback
   MONITOR switch: TAPE



2. Confirm that the LINE OUT level is 42–47 mV (–25.5 to –24.5 dB).

3. Confirm that the LED peak program meter indicates approx. 0 dB, and the LINE OUT levels vary between 25–77mV (–30 to –20dB) according to the REC LEVEL CAL controls turning.

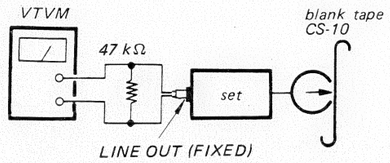
REC LEVEL CAL (calibration) Adjustment

Setting:

CALIBRATION switch: REC LEVEL

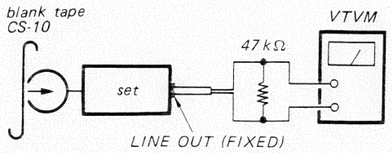
Procedure:

1. Mode: record
   MONITOR switch: SOURCE



Confirm that the LINE OUT level is 43–45 mV (–25.2 to –24.8 dB).

2. Mode: record and simultaneous playback
   MONITOR switch: TAPE



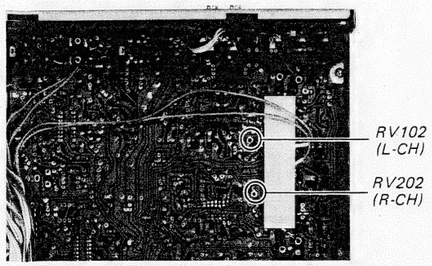
Confirm that the LINE OUT level is 42–47 mV (–25.5 to –24.5 dB).

3. Slowly turn RV102 (L-CH) and RV202 (R-CH) and stop them just when the second RED segments go out.

4. Confirm that the LINE OUT levels vary between 29–66 mV (–28.5 to –21.5 dB) according to the REC LEVEL CAL controls turning.

Adjustment Location

– record/playback board –



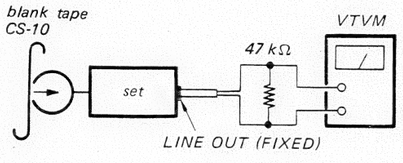
BIAS CAL (calibration) Measurement

Setting:

CALIBRATION switch: BIAS

Procedure:

1. Mode: record and simultaneous playback
   MONITOR switch: TAPE



2. Confirm that the LINE OUT level is 42–47 mV (–25.5 to –24.5 dB).

3. Confirm that the LED peak program meter indicates approx. 0 dB, and the LINE OUT levels vary between 25–77mV (–30 to –20dB) according to the REC LEVEL CAL controls turning.

SECTION 4
DIAGRAMS

Voltages and Waveforms at the Terminals of IC801.

Terminal No.	Waveform or Voltage	Terminal No.	Waveform or Voltage	Terminal No.	Waveform or Voltage
①	10Vp-p, 4 µsec	⑭	Forward Mode: 10V / 0V	㉙	10 Vdc
②	• Forward Mode: 10Vp-p, 0.7 sec • Fast Forward Mode: 10Vp-p, 20 msec • When pause botton is pushed in forward mode: 10 Vdc • Tape End: 10 Vdc	⑮	Record Mode: 10V / 0V	㉚	Fast Forward Mode: 10V / 0V, –2.2V, 0.3 sec. Fast Forward button is pushed.
		⑯	10 Vdc	㉛	Rewind Mode: 10V / 0V, 0.3 sec Rewind button is pushed.
		⑰	Forward Mode: 10V / 0V, 0.5 sec Forward button is pushed.		
③	8Vp-p, 8 msec	⑱	Record/Forward Mode: 10V / 0V	㉜	10 Vdc
④ to ⑥	0 Vdc	⑲	Pause Mode: 10V / 0V	㉝	10V / 0V Rewind button is pushed.
⑦	10Vp-p, 2.5 sec S17 (POWER): ON 10Vp-p, 0.5 sec S17 (POWER): ON	⑳ to ㉒	10 Vdc	㉞	10V / 0V Stop button is pushed or the cassette lid is open.
		㉓	10V / 0V Record/Forward button is pushed. Record Muting or Pause button is pushed.	㉟	10V / 0V Forward button is pushed.
⑧	10V / 0V Record button is pushed.	㉔	0 Vdc	㊱	10V / 0V Fast Forward button is pushed.
⑨	10V / 0V Pause button is pushed.	㉕	Forward or Record Mode: 10V / 3.3V / 0V, 0.6 sec Forward or Record button is pushed.	㊲	• S810 (MEMORY): ON: 10 V / 0V Tape counter is at 999 in rewind mode.
⑩	10V / 0V Record button is pushed.	㉖	Fast Forward or Rewind Mode or Record/Forward/Pause Mode: 10V / 0V	㊳	• S811 (timer): PLAY
⑪	0 Vdc	㉗	Forward Mode: 10V / 0V	㊴	• S811 (timer): REC
⑫ ⑬	Fast Forward or Rewind Mode: 10V / 0V	㉘	0.35 sec.: 10V / 0V Forward or Fast Forward or Rewind button is pushed.	㊵	When the accidental erasure prevention tab is broken: 0 V When the accidental erasure prevention tab is not broken: 10 V
				㊶	0 Vdc
				㊷	4Vp-p, 4 µsec

4-1. SCHEMATIC DIAGRAM — System Control Section —

Refer to page 21 for voltages and waveforms at the terminals of IC801.

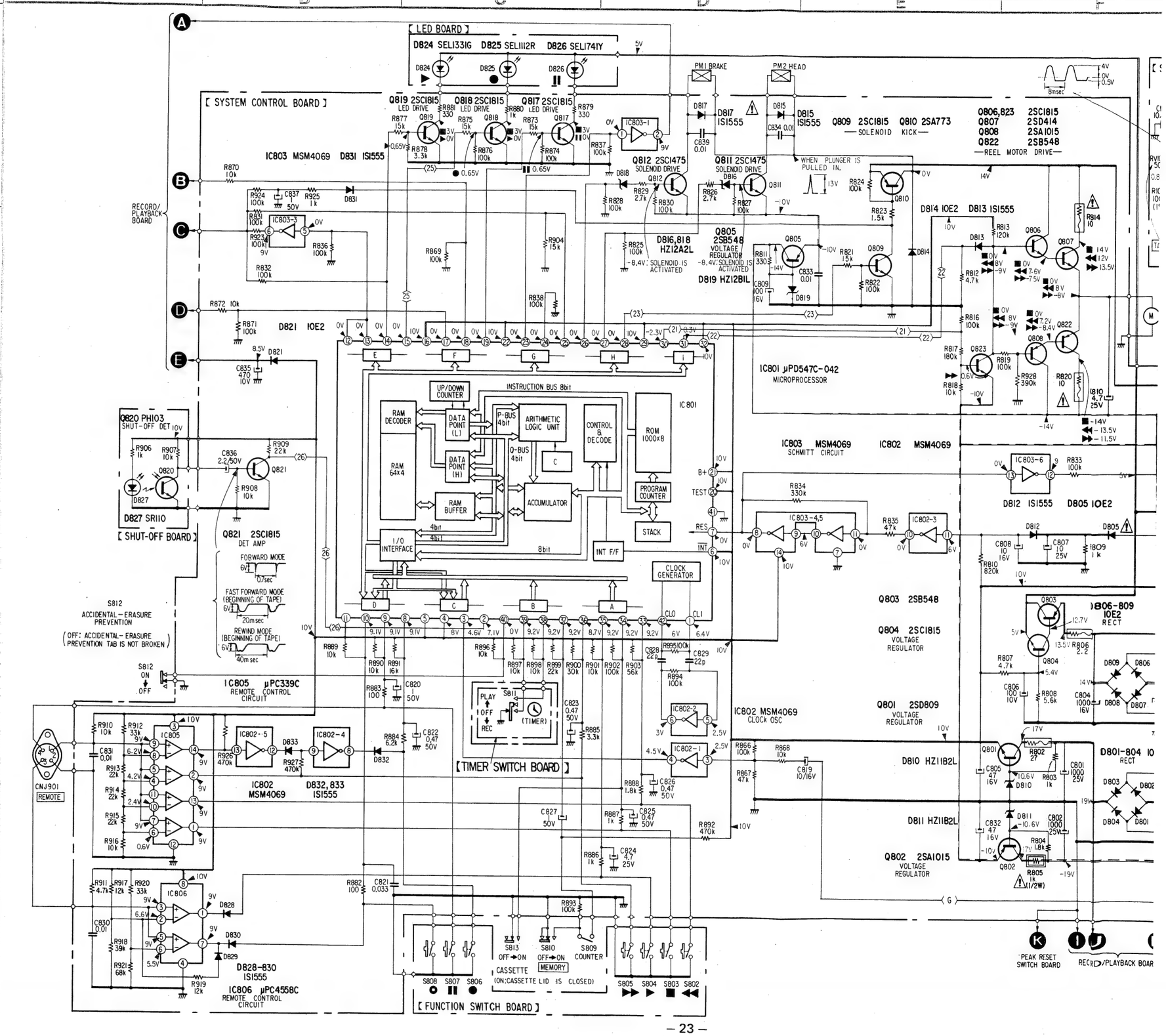
Note:

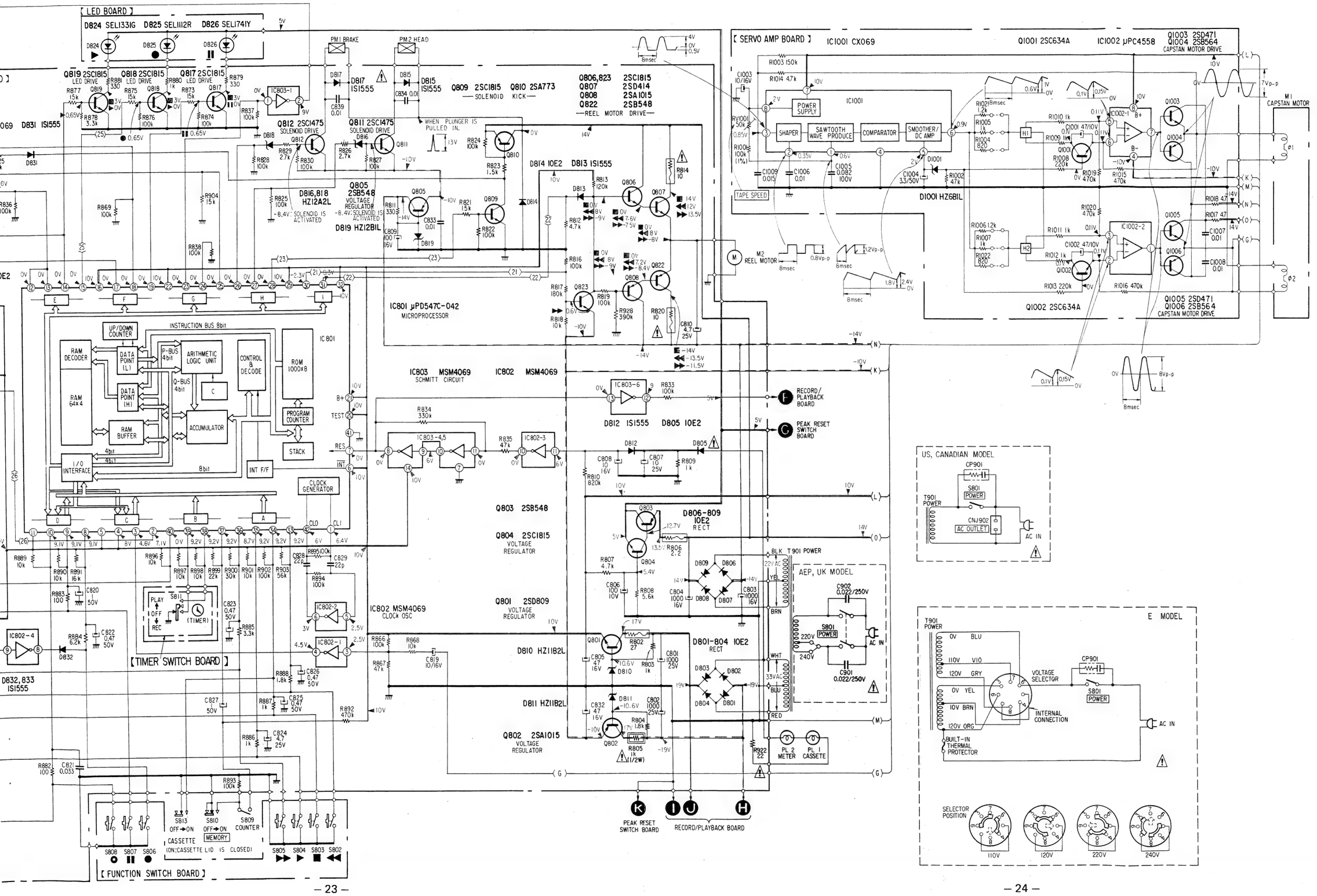
- All capacitors are in μF unless otherwise noted. p : μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, 1/4W unless otherwise noted. kΩ : 1000Ω, MΩ : 1000kΩ
- : fusible resistor
- : nonflammable resistor.
- 1% indicates component tolerance.
- ——— : B+ bus.
- — — — : B− bus.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a VOM (20 kΩ/V).
  no mark: STOP
  ▶ : FORWARD
  ▶▶ : FAST FORWARD
  ◀◀ : REWIND
  ● : RECORD
  ⊙ : REC MUTE
  ❚❚ : PAUSE
  ■ : STOP
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S801	POWER	OFF
S802	REWIND	OFF
S803	STOP	OFF
S804	FORWARD	OFF
S805	FAST FORWARD	OFF
S806	RECORD	OFF
S807	PAUSE	OFF
S808	REC MUTE	OFF
S812	ACCIDENTAL-ERASURE PREVENTION	ON
S813	CASSETTE	OFF

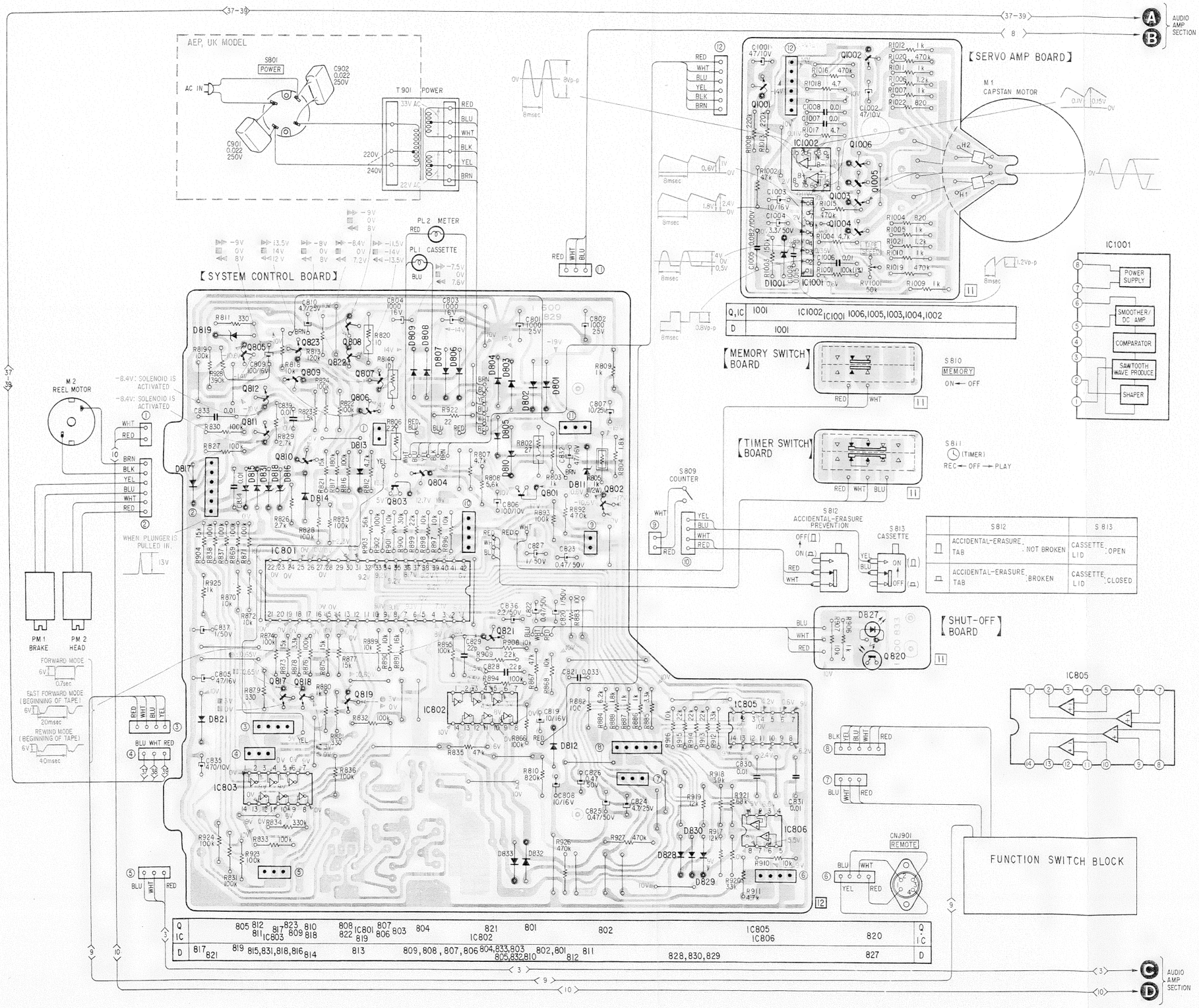
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.




[LED BOARD]
D824 SEL1331G D825 SEL1112R D826 SEL1741Y
Q819 2SC1815 LED DRIVE
Q818 2SC1815 LED DRIVE
Q817 2SC1815 LED DRIVE
IC803-1
PM1 BRAKE
PM2 HEAD
D817 1S1555
D815 1S1555
Q809 2SC1815 — SOLENOID KICK —
Q810 2SA773
Q806,823 2SC1815
Q807 2SD414
Q808 2SA1015
Q822 2SB548
— REEL MOTOR DRIVE —
WHEN PLUNGER IS PULLED IN.
Q812 2SC1475 SOLENOID DRIVE
Q811 2SC1475 SOLENOID DRIVE
D816,818 HZ12A2L
-8.4V: SOLENOID IS ACTIVATED
Q805 2SB548 VOLTAGE REGULATOR
-8.4V: SOLENOID IS ACTIVATED
D819 HZ12B1L
D814 10E2
D813 1S1555
IC801 μPD547C-042
MICROPROCESSOR
IC803 MSM4069
SCHMITT CIRCUIT
IC802 MSM4069
IC801
UP/DOWN COUNTER
INSTRUCTION BUS 8bit
RAM DECODER
RAM 64x4
DATA POINT (L)
DATA POINT (H)
P-BUS 4bit
Q-BUS 4bit
ARITHMETIC LOGIC UNIT
CONTROL & DECODE
ROM 1000x8
PROGRAM COUNTER
STACK
RAM BUFFER
ACCUMULATOR
I/O INTERFACE
INT F/F
CLOCK GENERATOR
IC803-6
IC803-4,5
IC802-3
D812 1S1555
D805 10E2
Q803 2SB548
Q804 2SC1815 VOLTAGE REGULATOR
D806-809 10E2 RECT
Q801 2SD809 VOLTAGE REGULATOR
IC802 MSM4069 CLOCK OSC
IC802-4
IC802-2
IC802-1
D810 HZ11B2L
D801-804 10E2 RECT
D811 HZ11B2L
Q802 2SA1015 VOLTAGE REGULATOR
[TIMER SWITCH BOARD]
D832,833 1S1555
S811 PLAY OFF REC (TIMER)
[FUNCTION SWITCH BOARD]
S808 S807 S806
CASSETTE (ON:CASSETTE LID IS CLOSED)
S813 OFF→ON
S810 OFF→ON MEMORY
S809 COUNTER
S805 S804 S803 S802
[SERVO AMP BOARD]
IC1001 CX069
Q1001 2SC634A
IC1002 μPC4558
Q1003 2SD471
Q1004 2SB564
CAPSTAN MOTOR DRIVE
POWER SUPPLY
SHAPER
SAWTOOTH WAVE PRODUCE
COMPARATOR
SMOOTHER/ DC AMP
TAPE SPEED
D1001 HZ6B1L
M2 REEL MOTOR
Q1002 2SC634A
Q1005 2SD471
Q1006 2SB564
CAPSTAN MOTOR DRIVE
M1 CAPSTAN MOTOR
IC1002-1
IC1002-2
H1
H2
PL 2 METER
PL 1 CASSETE
PEAK RESET SWITCH BOARD
RECORD/PLAYBACK BOARD
RECORD/ PLAYBACK BOARD
PEAK RESET SWITCH BOARD
US, CANADIAN MODEL
CP901
S801 POWER
T901 POWER
CNJ902 AC OUTLET
AC IN
AEP, UK MODEL
C902 0.022/250V
C901 0.022/250V
220V
240V
E MODEL
0V BLU
110V VIO
120V GRY
0V YEL
10V BRN
120V ORG
VOLTAGE SELECTOR
INTERNAL CONNECTION
BUILT-IN THERMAL PROTECTOR
SELECTOR POSITION
110V
120V
220V
240V

4-2. MOUNTING DIAGRAM – System Control Section – — Conductor Side —



Q, IC	1001	IC1002	IC1001	1006, 1005, 1003, 1004, 1002
D	1001			

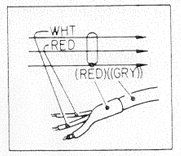
	S812	S813
□	ACCIDENTAL-ERASURE TAB : NOT BROKEN	CASSETTE LID : OPEN
□	ACCIDENTAL-ERASURE TAB : BROKEN	CASSETTE LID : CLOSED

Q / IC	805 812 811 817 823 809 810 818 IC803	808 822 819 IC801	807 806 803	804	821 IC802	801	802	IC805 IC806	820	Q / IC
D	817 821	819	815, 831, 818, 816	814	813	809, 808, 807, 806	804, 833, 803 805, 832, 810	802, 801 812	811	828, 830, 829	827	D

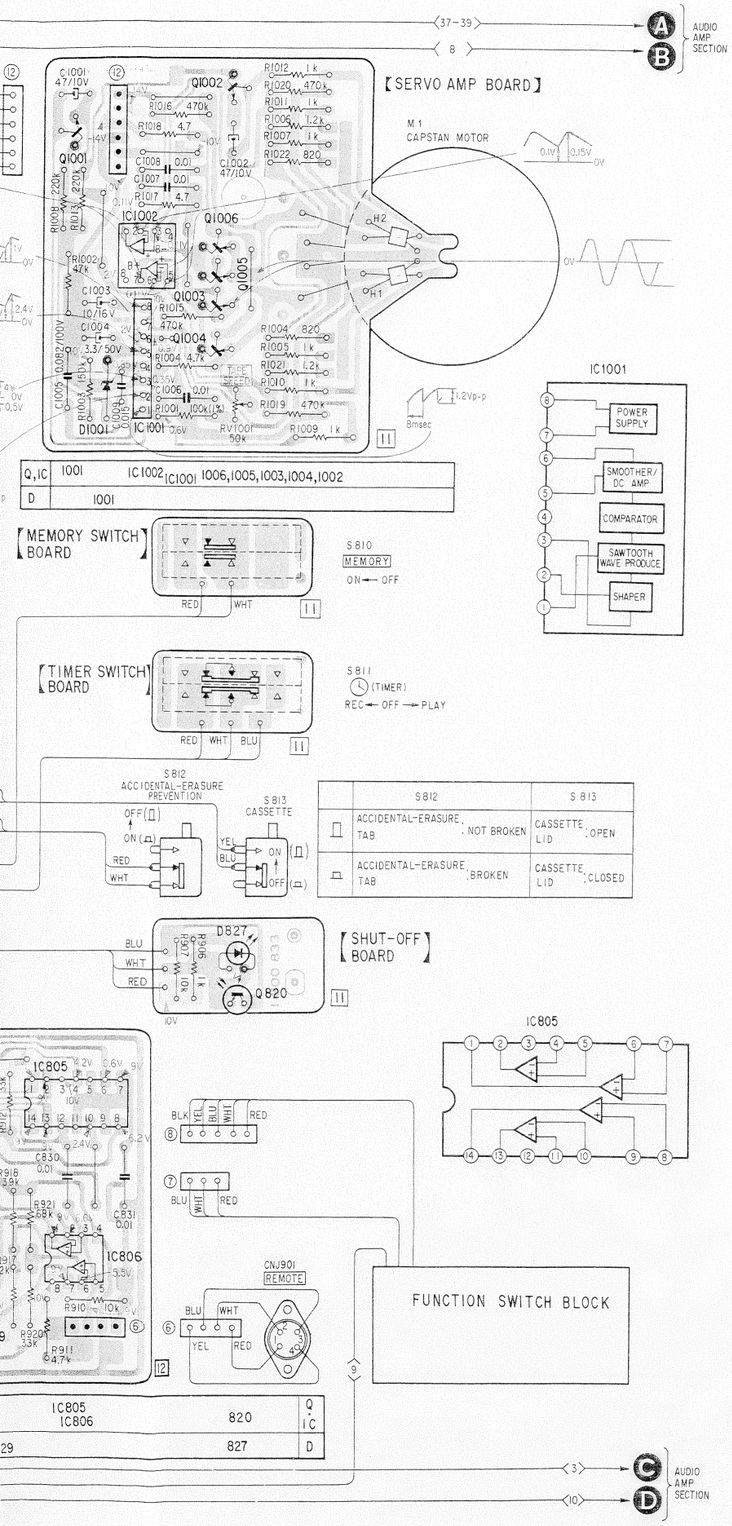
Reper to page 21 for voltages and wavef at the terminal of IC801.

Note:

- Color code of sleeving over the end of the ja



- : B+ pattern.
- : B– pattern.
- no mark: STOP
  - ▶ : FORWARD
  - ▶▶ : FAST FORWARD
  - ◀◀ : REWIND
  - ● : RECORD
  - ◎ : REC MUTE
  - ▮▮ : PAUSE
  - ■ : STOP

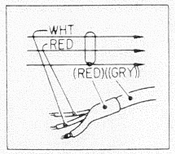


	S812	S813
□	ACCIDENTAL-ERASURE TAB : NOT BROKEN	CASSETTE LID : OPEN
□	ACCIDENTAL-ERASURE TAB : BROKEN	CASSETTE LID : CLOSED

Reper to page 21 for voltages and waveforms at the terminal of IC801.

Note:

- Color code of sleeving over the end of the jacket.

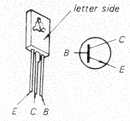


- : B+ pattern.
- : B– pattern.
- no mark: STOP
  - ▷ : FORWARD
  - ▷▷ : FAST FORWARD
  - ◁◁ : REWIND
  - ● : RECORD
  - ◎ : REC MUTE
  - ▮▮ : PAUSE
  - ■ : STOP

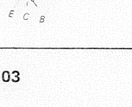
- **Replacement Semiconductors**

For replacement, use semiconductors except in ( ).

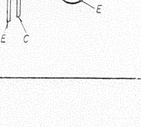
Q801: 2SD809
Q807: 2SD414



Q802, 808: 2SA1027R (2SA1015)

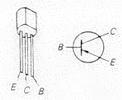


Q803, 805, 822: 2SB548

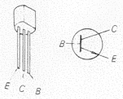


Q804, 806, 809, 817–819, 821, 823 : 2SC1364 (2SC1815)

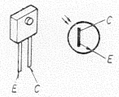
Q810: 2SA684 (2SA773)



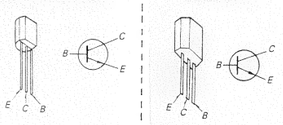
Q811, 812 : 2SC1475



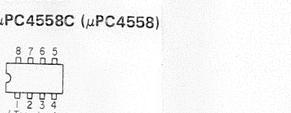
Q820: PH103



Q1001, 1002: 2SC1364 (2SC634A)



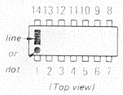
Q1003, 1005: 2SC1475 (2SD471)



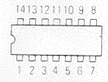
Q1004, 1006: 2SA684 (2SB564)

IC801: μPD547C-042

IC802, 803: MSM4069



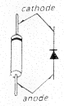
IC805: μPC339C



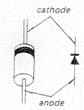
IC806: μPC4558C
IC1002: μPC4558C (μPC4558)

IC1001: CX069

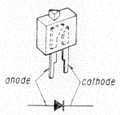
D801–805, 806–809, 814, 821 : 10E2
D812, 813, 815, 817, 828–833 : 1S1555



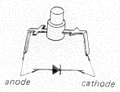
D810, 811: HZ11B2L
D816, 818: HZ12A3L (HZ12A2L)
D819: HZ12B2L (HZ12B1L)



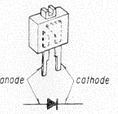
D824: SEL1331G



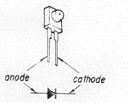
D825: SEL1112R



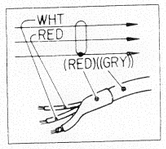
D826: SEL1741Y



D827: SR110



- Color code of sleeving over the end of the jacket.



- : B + pattern
- : B — pattern
- Signal path
  - : L-CH
  - : R-CH
  - : Common
- no mark: STOP
  - ▶ : FORWARD
  - ▶▶ : FAST FORWARD
  - ◀◀ : REWIND
  - ● : RECORD
  - ○ : REC MUTE
  - ▮▮ : PAUSE
  - ■ : STOP

SYSTEM CONTROL SECTION A B

HRP RPF195-3602

R-CH L-CH

HE EF206-36

LOW : 15V AC
MED : 18V AC
HIGH : 25V AC
METAL : 41.5V AC

LOW : 14V AC
MED : 16.5V AC
HIGH : 22V AC
METAL : 37.5V AC

LED PEAK PROGRAM METER

【METER BOARD】

Q, IC
602 601 604 603 606 605 IC601

Q, IC D
509 503
510,504 501,502 503 511 501
111 508 512 505 507 506
104 IC101 515 103 IC104 102 101 110 106 502
109 101
204 201 202 203 IC201 201
211 206 513
IC204 202,203 102,103
206 IC103 106 204,104
209 208,207
205,108 210,105
107 512 205
505,504 509 105 507
516 IC102 514 506,510 508
518 IC501 513

【PEAK RESET SWITCH BOARD】

S107 PEAK HOLD RESET

S107-1 MANUAL S107-2 AUTO

【RECORD/PLAYBACK BOARD】

LINE OUT FIXED

LINE IN

LED PEAK PROGRAM METER(L)

LED PEAK PROGRAM METER(R)

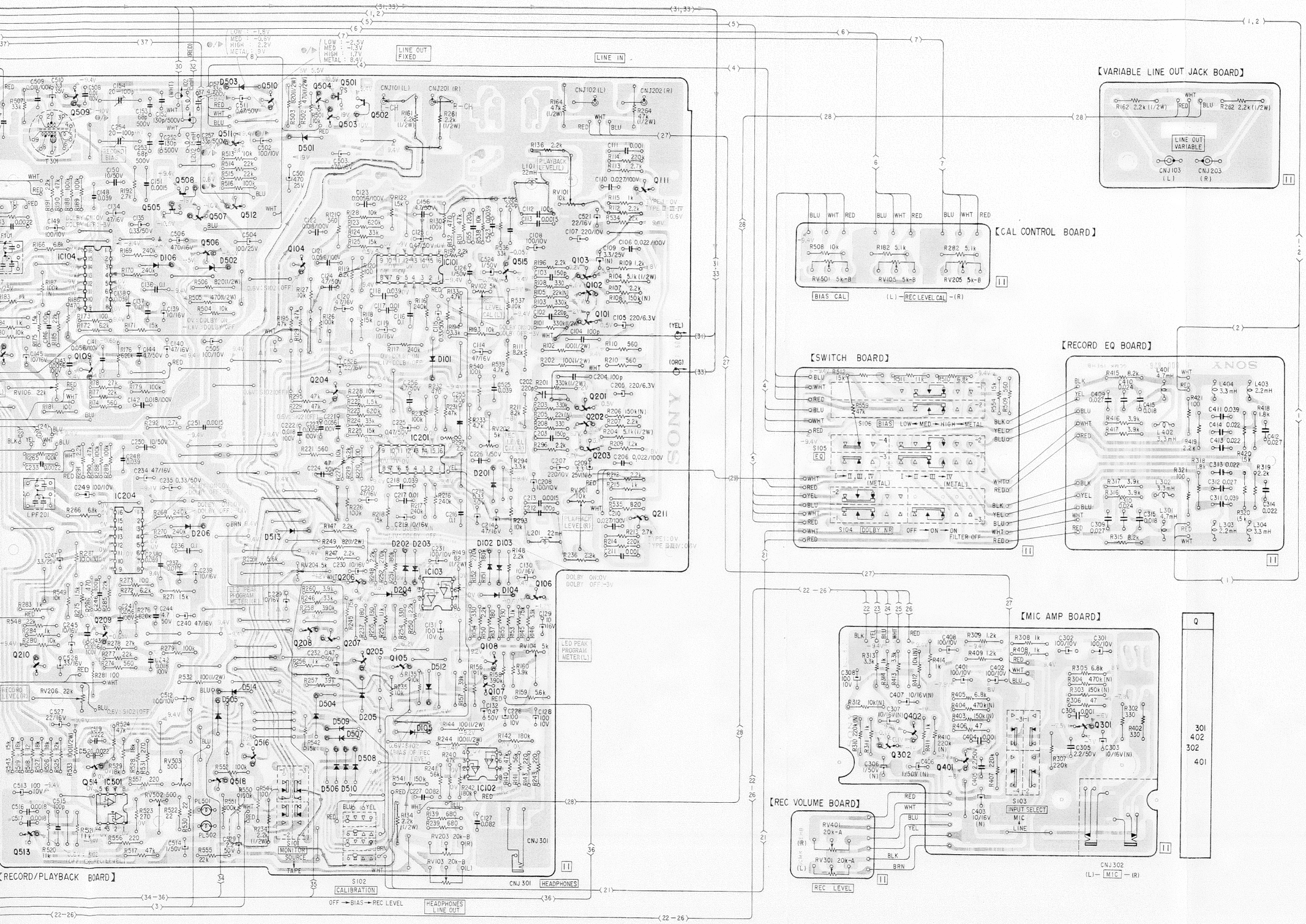
S101 MONITOR SOURCE TAPE

S102 CALIBRATION OFF → BIAS → REC LEVEL

HEADPHONES LINE OUT

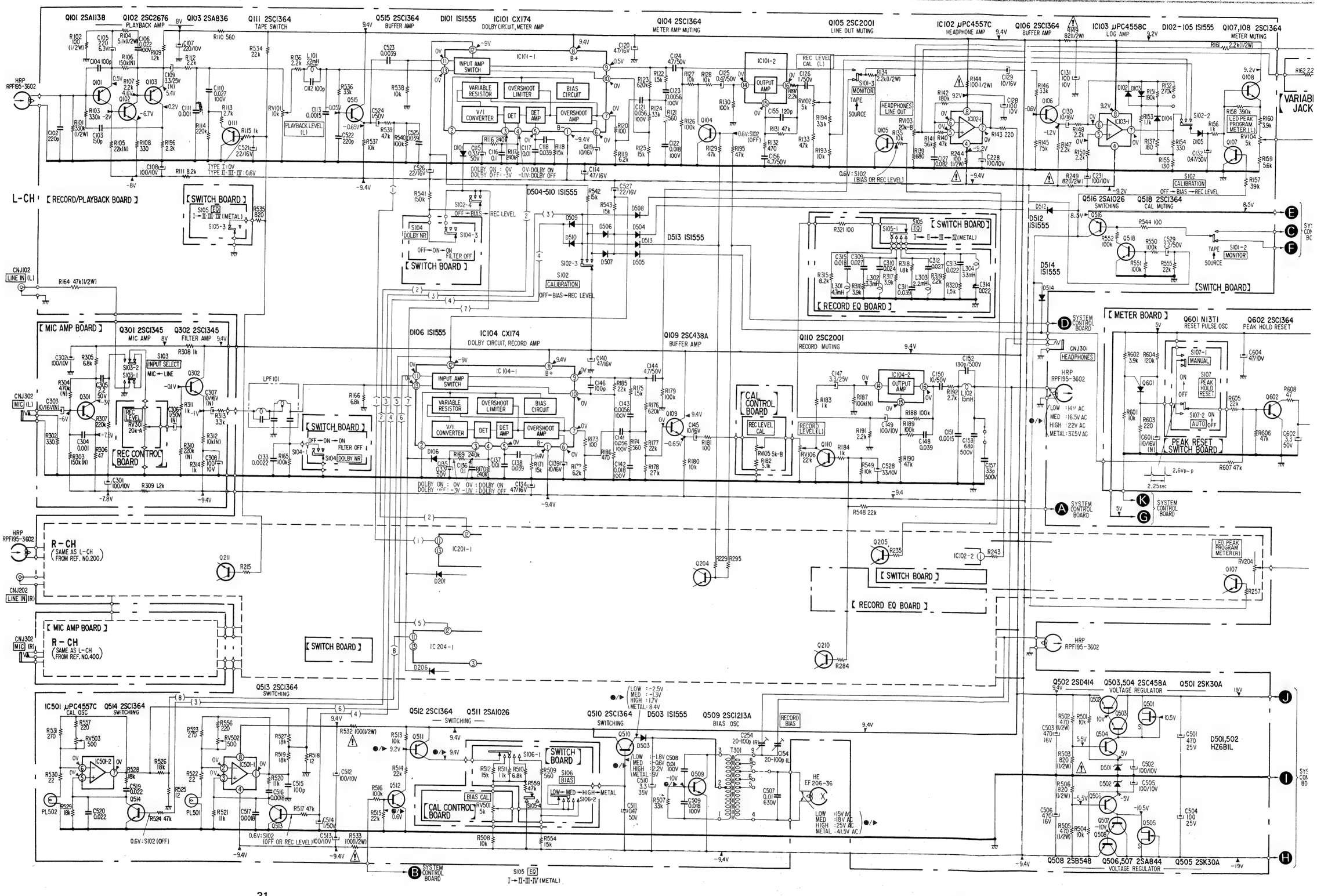
CNJ 301 HEADPHONES

SYSTEM CONTROL SECTION C D


【RECORD/PLAYBACK BOARD】
【VARIABLE LINE OUT JACK BOARD】
【CAL CONTROL BOARD】
【SWITCH BOARD】
【RECORD EQ BOARD】
【MIC AMP BOARD】
【REC VOLUME BOARD】
LINE OUT FIXED
LINE IN
PLAYBACK LEVEL(L)
PLAYBACK LEVEL(R)
REC LEVEL(L)
REC LEVEL(R)
BIAS CAL
REC LEVEL CAL
LINE OUT VARIABLE
CNJ103 (L)
CNJ203 (R)
S105 EQ
S106 BIAS LOW → MED → HIGH → METAL
S104 DOLBY NR OFF → ON
ON FILTER OFF
S103 INPUT SELECT MIC LINE
S102 CALIBRATION OFF → BIAS → REC LEVEL
S101 MONITOR SOURCE TAPE
CNJ301 HEADPHONES
HEADPHONES LINE OUT
CNJ302 (L) — MIC — (R)
REC LEVEL
LED PEAK PROGRAM METER(L)
LED PEAK PROGRAM METER(R)
SONY

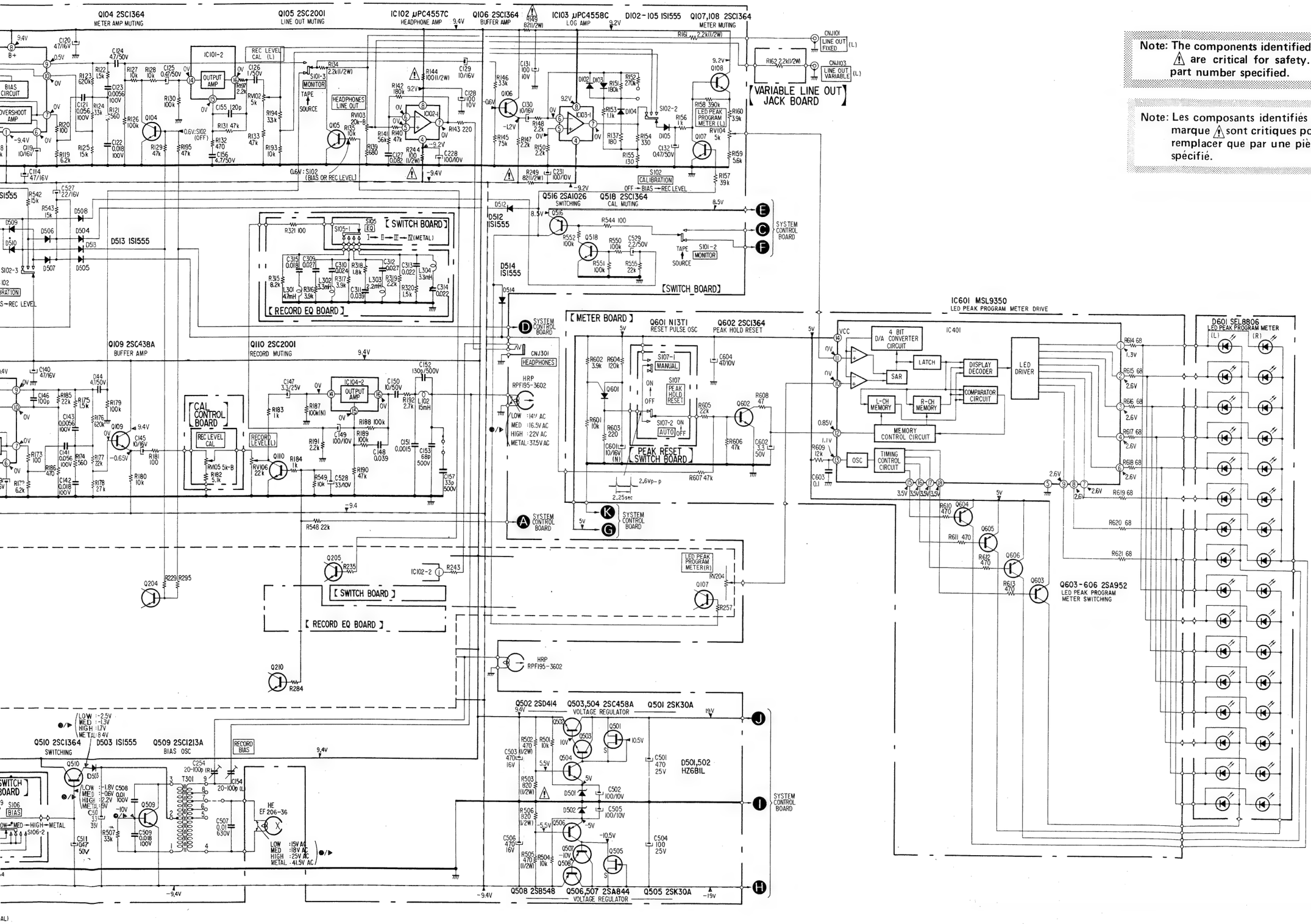
4-4. SCHEMATIC DIAGRAM — Audio Amp Section —

See page 34 for the notes.



Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



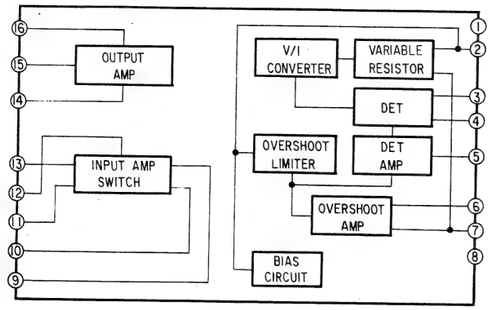
– Audio Amp Section –

Note:

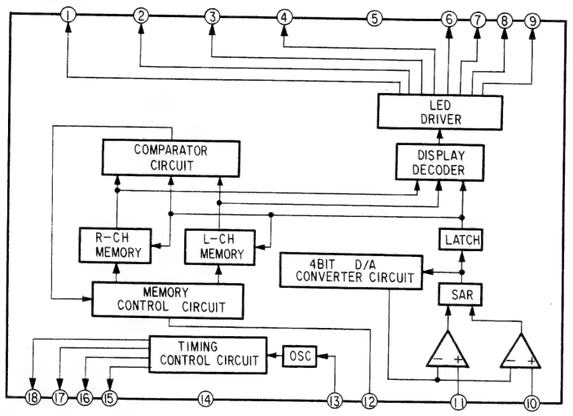
- Components for right channel have same values as for left channel. Reference numbers are coded from 200 and 400.
- All capacitors are in μF unless otherwise noted. pF = μμF 50WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ : 1000 Ω, MΩ = 1000 kΩ
- : fusible resistor.
- (N) : low-noise.
- ——— : B+ bus.
- – – – : B– bus.
- ▭ : panel designation.
- ▭ : adjustment for repair.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20 kΩ/V).
  no mark: STOP
  ▶ : FORWARD
  ▶▶ : FAST FORWARD
  ◀◀ : REWIND
  ● : RECORD
  O : REC MUTE
  ❚❚ : PAUSE
  ■ : STOP
- AC voltage readings in the bias oscillator circuit are taken with a VTVM.
- Voltage variations may be noted due to normal production tolerances.
- Switch

Ref. No.	Switch	Position
S101-1 to 101-4	MONITOR	TAPE
S102-1 to 101-4	CALIBRATION	OFF
S103-1 to 103-4	INPUT SELECT	LINE
S104-1 to 104-3	DOLBY NR	OFF
S105-1 to 105-4	EQ	I
S106-1, 2	BIAS	MED
S107-1	MANUAL	OFF
S107-2	AUTO	ON

IC101, 104, 201, 204



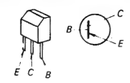
IC601



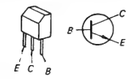
– Audio Amp Section –

- **Replacement Semiconductors**
  For replacement, use semiconductors except in ( ).

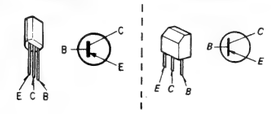
Q101, 201 : 2SA1138



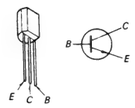
Q102, 202 : 2SC2676



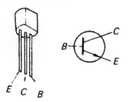
Q103, 203 : 2SA872-E (2SA836)



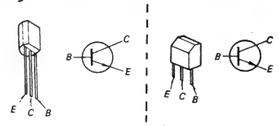
Q104, 204
Q106–108
Q206–208
Q111, 211
510, 512–515
518, 602 : 2SC1364



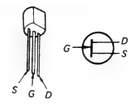
Q105, 205
Q110, 210 : 2SC2001
Q301, 401
Q302, 402 : 2SC1345



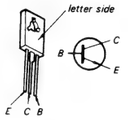
Q109, 209
Q503, 504 : 2SC1362 (2SC458A)



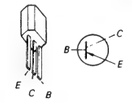
Q501, 505 : 2SK30A



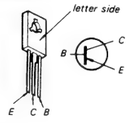
Q502 : 2SD414



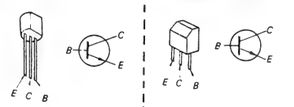
Q506, 507 : 2SA1027R (2SA844)
Q511, 516 : 2SA1027R (2SA1026)



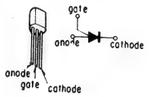
Q508 : 2SB548



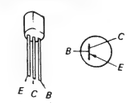
Q509 : 2SC1475 (2SC1213A)



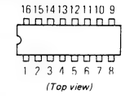
Q601 : N13TI



Q603–606 : 2SA952

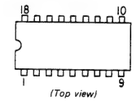


IC101, 201
IC104, 204 : CX174

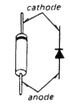


IC102, 202
IC501
IC103, 203 : μPC4557C
IC103, 203 : μPC4558C

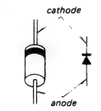
IC601 : MSL9350



D101–106
201–206
503–510
512–514 : 1S1555



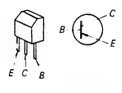
D501, 502 : HZ6B2L (HZ6B1L)



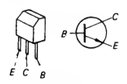
– Audio Amp Section –

- **Replacement Semiconductors**
  For replacement, use semiconductors except in ( ).

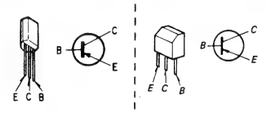
Q101, 201 : 2SA1138



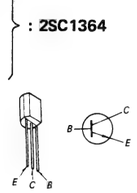
Q102, 202 : 2SC2676



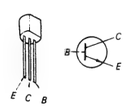
Q103, 203 : 2SA872-E (2SA836)



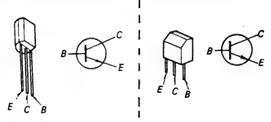
Q104, 204
Q106–108
Q206–208
Q111, 211
510, 512–515
518, 602 : 2SC1364



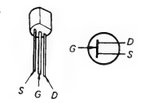
Q105, 205 : 2SC2001
Q110, 210 : 2SC2001
Q301, 401 : 2SC1345
Q302, 402 : 2SC1345



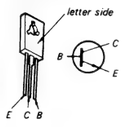
Q109, 209 : 2SC1362
Q503, 504 : 2SC1362 (2SC458A)



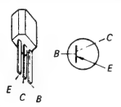
Q501, 505 : 2SK30A



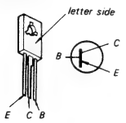
Q502 : 2SD414



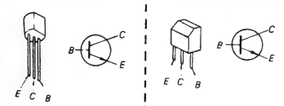
Q506, 507 : 2SA1027R (2SA844)
Q511, 516 : 2SA1027R (2SA1026)



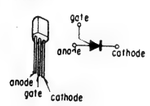
Q508 : 2SB548



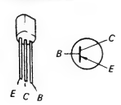
Q509 : 2SC1475 (2SC1213A)



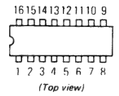
Q601 : N13TI



Q603–606 : 2SA952

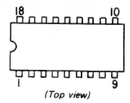


IC101, 201
IC104, 204 : CX174

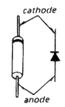


IC102, 202
IC501 : μPC4557C
IC103, 203 : μPC4558C

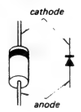
IC601 : MSL9350



D101–106
201–206
503–510
512–514 : 1S1555

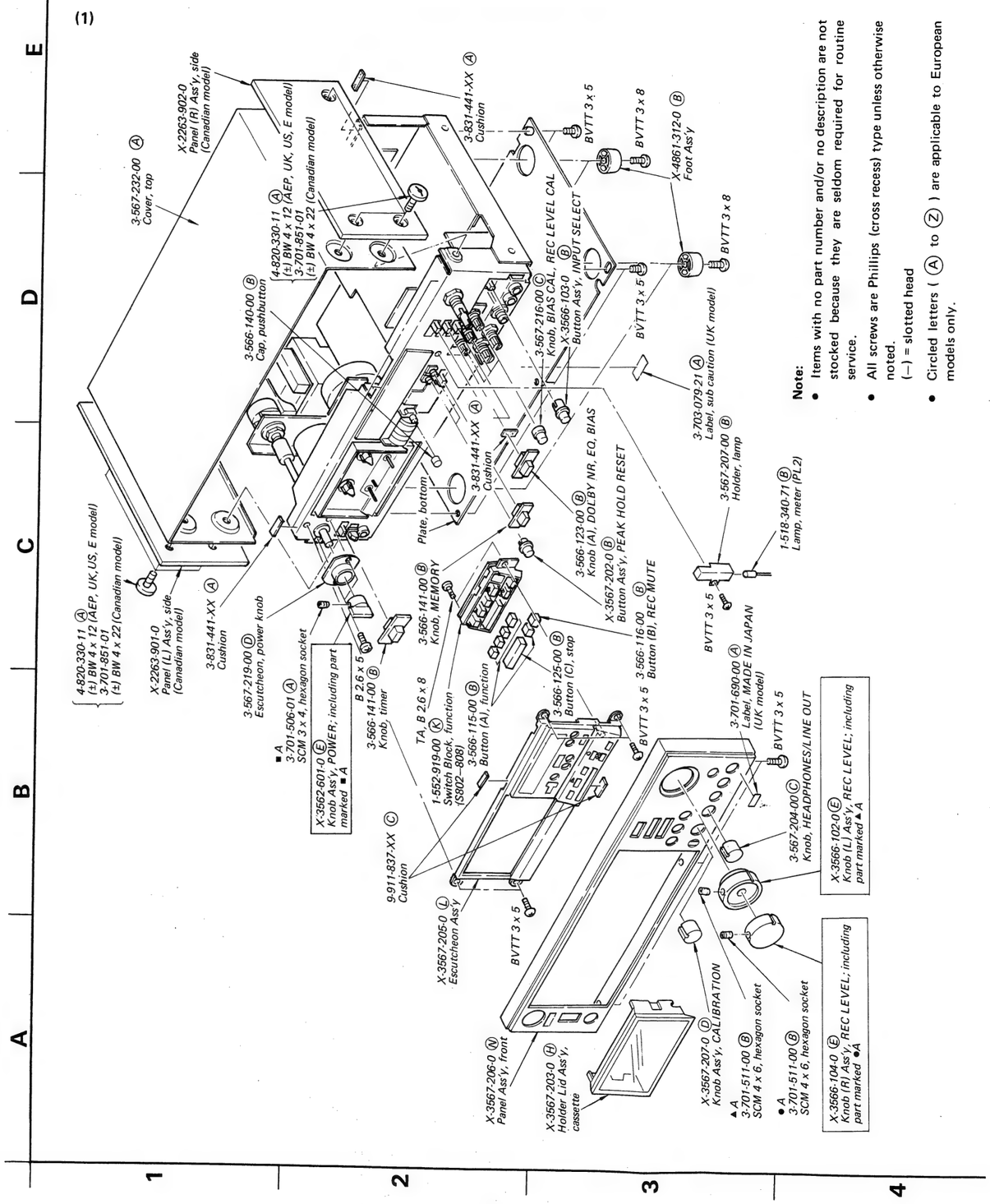


D501, 502 : HZ6B2L (HZ6B1L)



SECTION 5
EXPLODED VIEWS

(1)



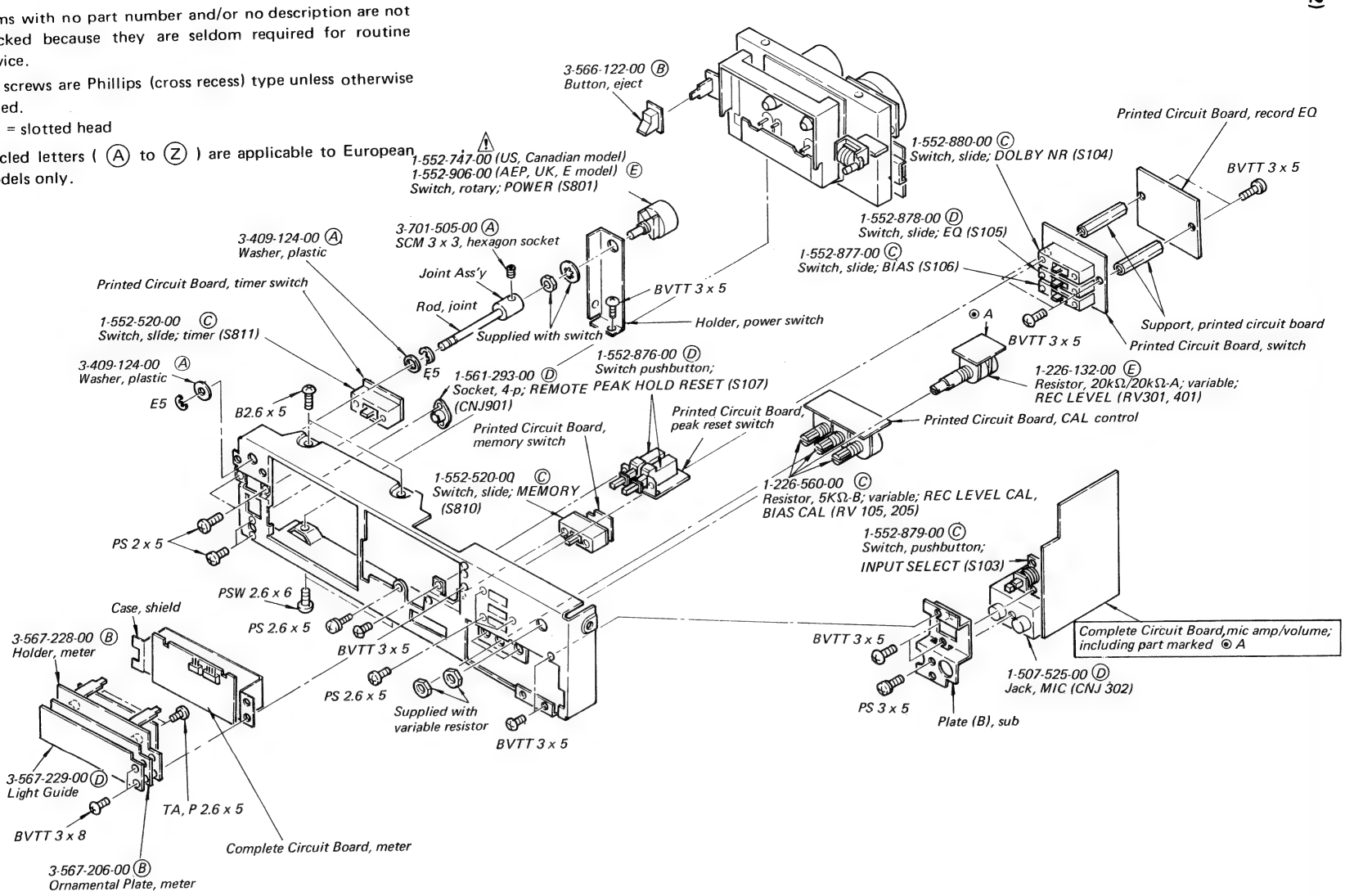
Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

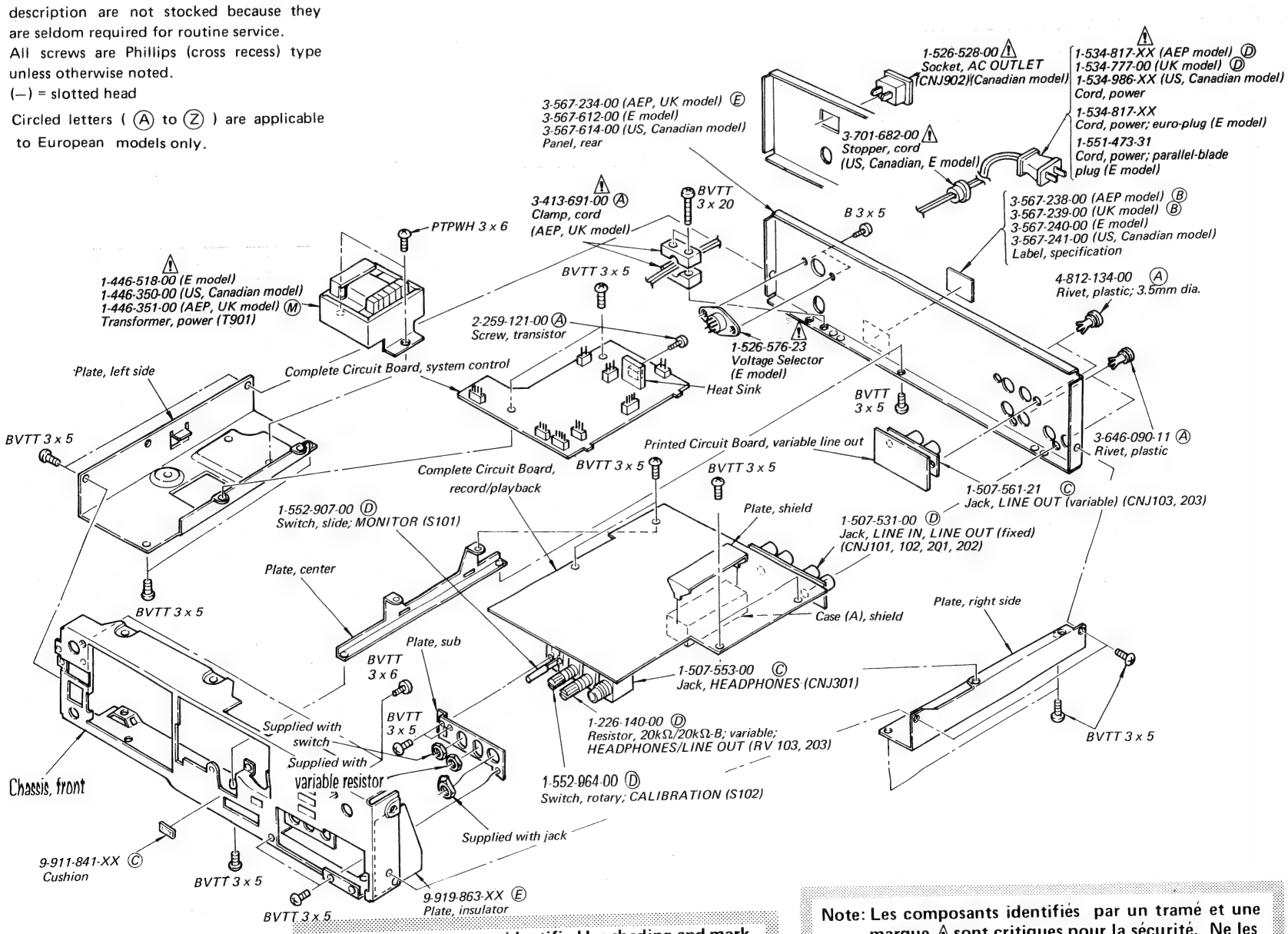
(2)



Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

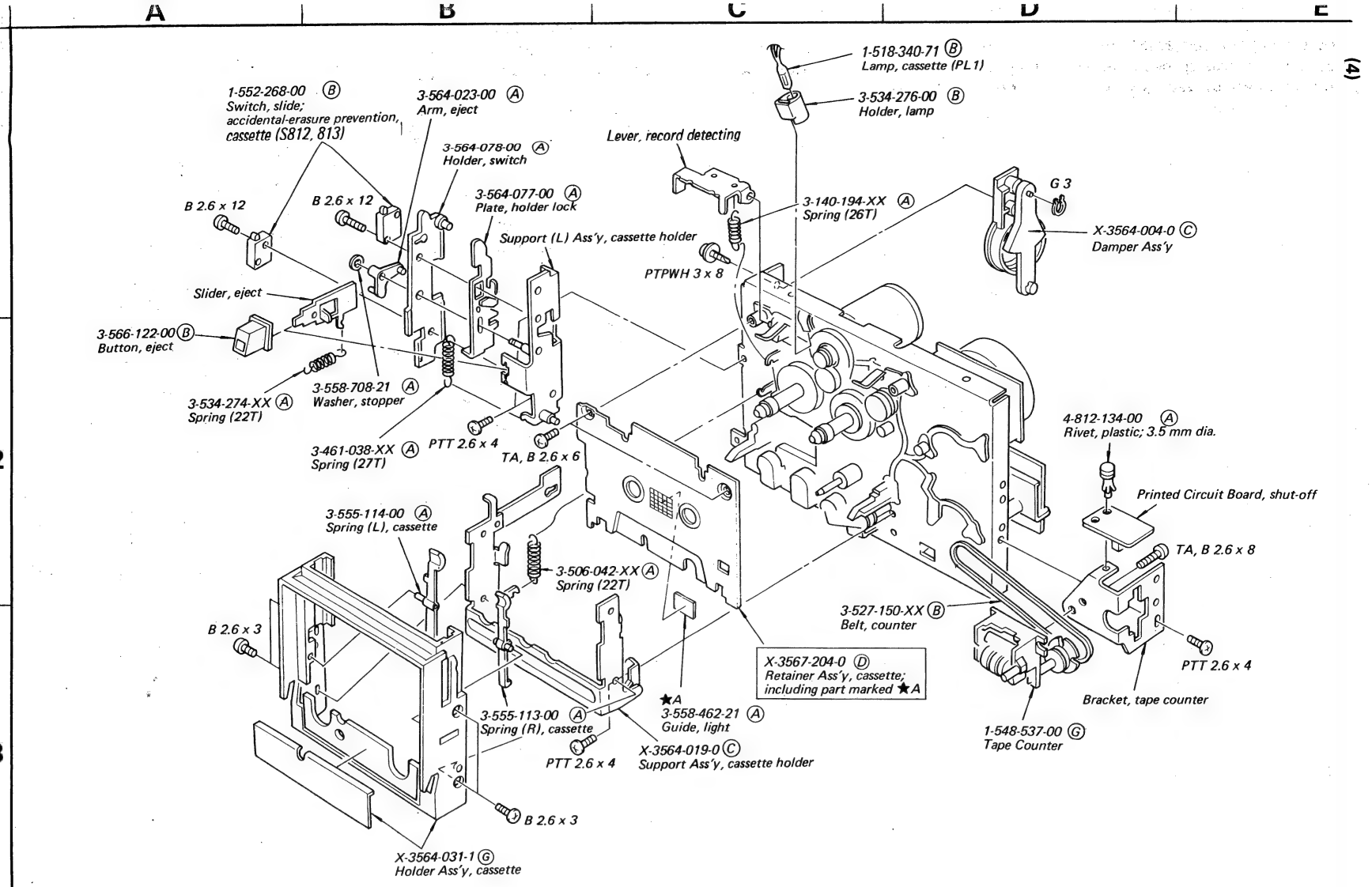
Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

(3)



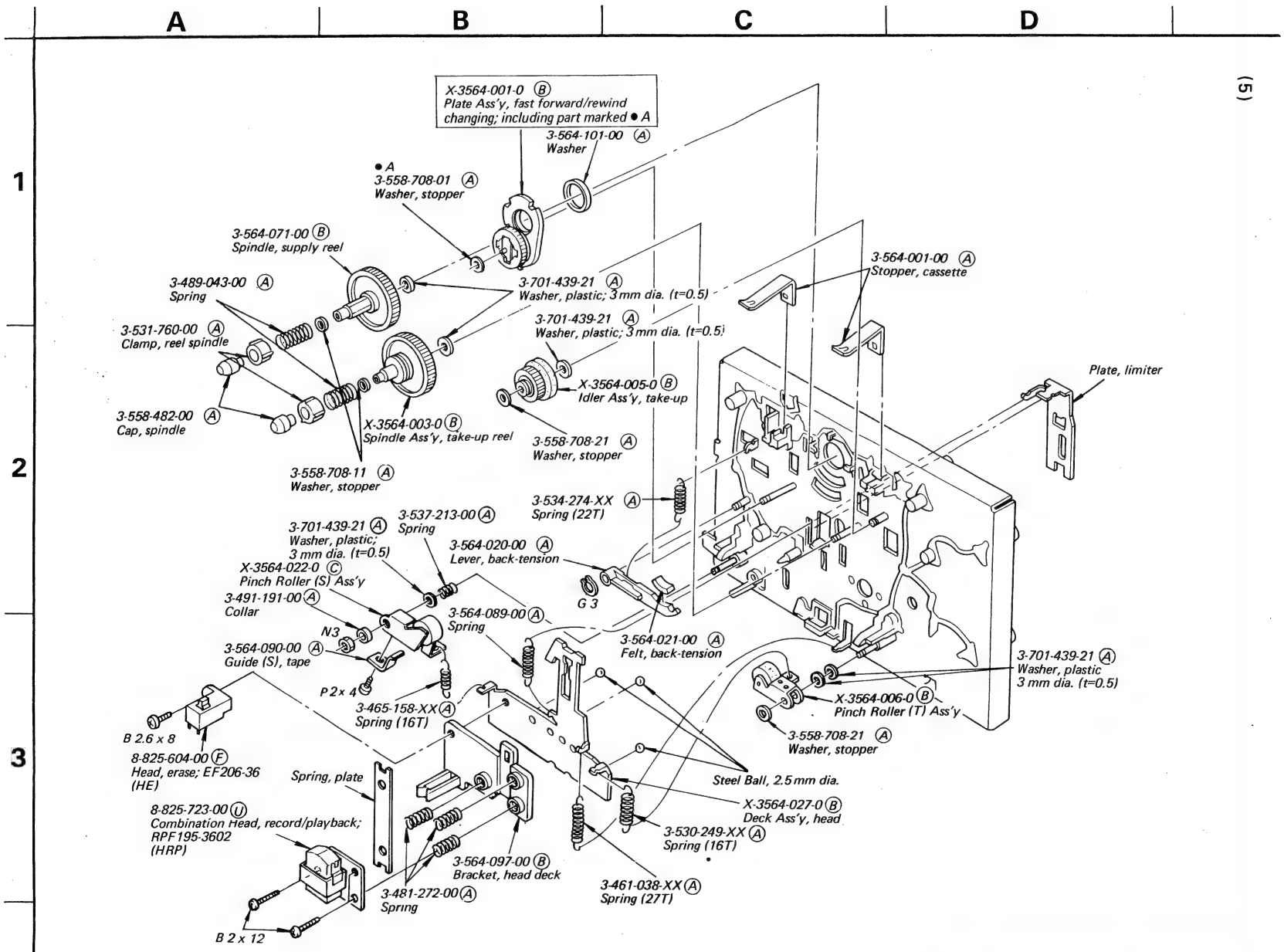
Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



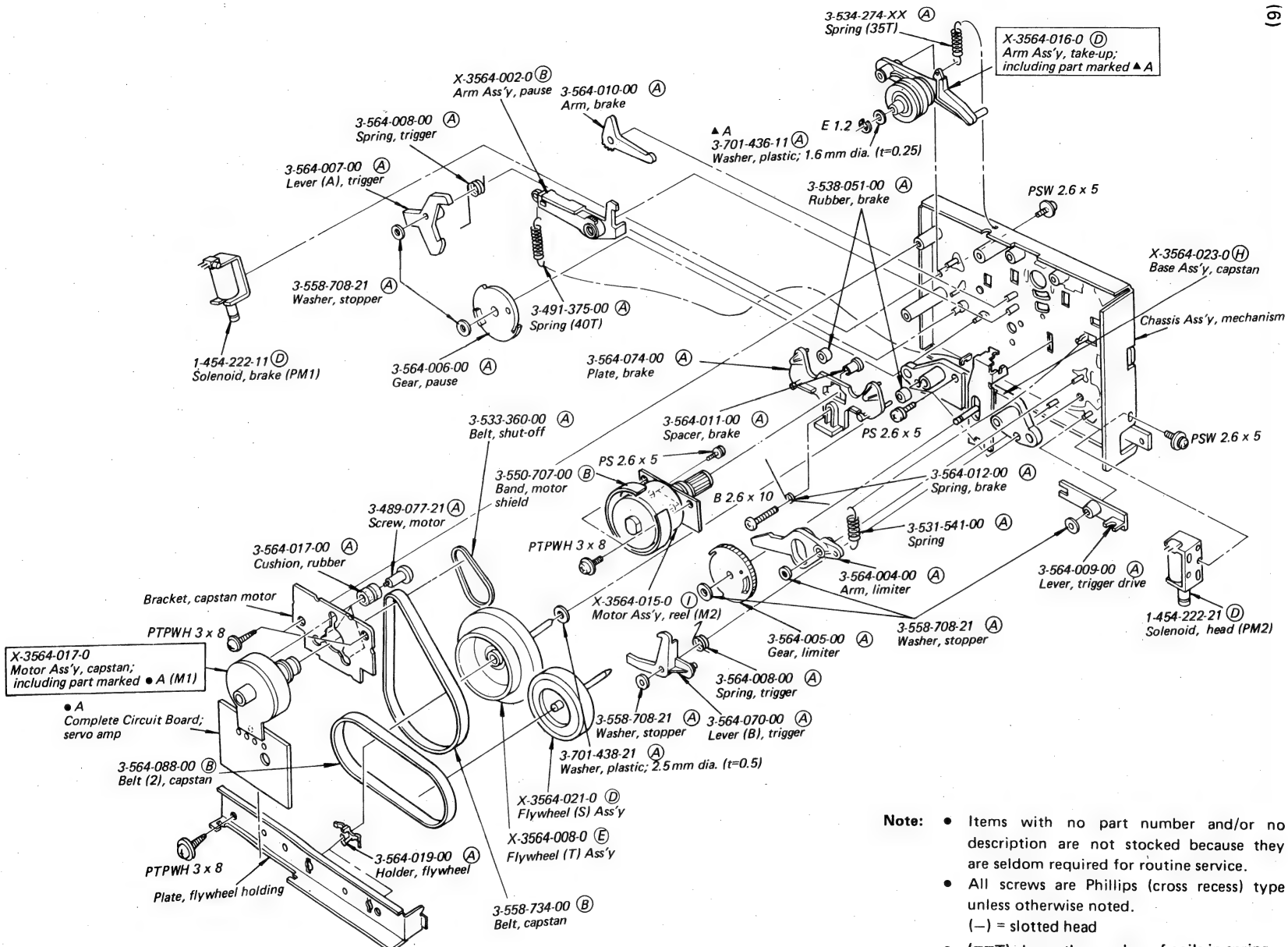
Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (—) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters ((A) to (Z)) are applicable to European models only.



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (—) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters ((A) to (Z)) are applicable to European models only.



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head
- (□□T) shows the number of coils in spring.
- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

SECTION 6
ELECTRICAL PARTS LIST

- Circled letters (Ⓐ to Ⓩ) are applicable to European models only.

Ref. No.	Part No.	Description
		Semiconductors
		Transistors
Q101, 201	8-729-113-82	Ⓚ 2SA1138
Q102, 202	8-729-167-62	Ⓑ 2SC2676
⇒Q103, 203	8-729-387-28	Ⓑ 2SA872-E
Q104, 204	8-729-663-47	Ⓒ 2SC1364
Q105, 205	8-729-100-13	Ⓑ 2SC2001
Q106–108 Q206–208	8-729-663-47	Ⓒ 2SC1364
⇒Q109, 209	8-729-665-47	Ⓑ 2SC1362
Q110, 210	8-729-100-13	Ⓑ 2SC2001
Q111, 211	8-729-663-47	Ⓒ 2SC1364
Q301, 302 Q401, 402	8-729-334-58	Ⓑ 2SC1345
Q501	8-729-203-04	Ⓑ 2SK30A
Q502	8-729-141-43	Ⓑ 2SD414
⇒Q503, 504	8-729-665-47	Ⓑ 2SC1362
Q505	8-729-203-04	Ⓑ 2SK30A
⇒Q506, 507	8-729-612-77	Ⓑ 2SA1027R
Q508	8-729-154-83	Ⓑ 2SB548
⇒Q509	8-760-413-10	Ⓑ 2SC1475
Q510	8-729-663-47	Ⓑ 2SC1364
⇒Q511	8-729-612-77	Ⓑ 2SA1027R
Q512–515	8-729-663-47	Ⓑ 2SC1364
⇒Q516	8-729-612-77	Ⓑ 2SA1027R
Q518	8-729-663-47	Ⓑ 2SC1364
Q601	8-729-101-31	Ⓑ N13T1
Q602	8-729-663-47	Ⓑ 2SC1364
Q603–606	8-729-195-23	Ⓑ 2SA952
Q801	8-729-180-93	Ⓑ 2SD809
⇒Q802	8-729-612-77	Ⓑ 2SA1027R
Q803	8-729-154-83	Ⓑ 2SB548
⇒Q804	8-729-663-47	Ⓒ 2SC1364
Q805	8-729-154-83	Ⓑ 2SB548
⇒Q806	8-729-663-47	Ⓒ 2SC1364
Q807	8-729-141-43	Ⓑ 2SD414
⇒Q808	8-729-612-77	Ⓑ 2SA1027R
⇒Q809	8-729-663-47	Ⓒ 2SC1364
⇒Q810	8-729-468-43	Ⓒ 2SA684
Q811, 812	8-760-413-10	Ⓑ 2SC1475
⇒Q817–819	8-729-663-47	Ⓒ 2SC1364
Q820	8-729-101-03	Ⓑ PH103
⇒Q821	8-729-663-47	Ⓒ 2SC1364
Q822	8-729-154-83	Ⓑ 2SB548
⇒Q823 ⇒1001, 1002	8-729-663-47	2SC1364
⇒Q1003	8-760-335-10	Ⓑ 2SC1474
⇒Q1004	8-729-468-43	Ⓒ 2SA684
⇒Q1005	8-760-335-10	Ⓒ 2SC1474
⇒Q1006	8-729-468-43	Ⓒ 2SA684
		ICs
IC101, 201	8-759-101-74	Ⓕ CX174
IC102, 202	8-759-145-57	Ⓓ μPC4557C
IC103, 203	8-759-145-58	Ⓓ μPC4558C
IC104, 204	8-759-101-74	Ⓕ CX174
IC501	8-759-145-57	Ⓓ μPC4557C
IC601	8-759-993-50	MSL9350
IC801	8-759-147-42	Ⓛ μPD547C-042
IC802, 803	8-759-904-69	Ⓒ MSM4069
IC805	8-759-133-90	Ⓕ μPC339C
IC806	8-759-145-58	Ⓓ μPC4558C
IC1001	8-750-690-00	Ⓓ CX069
⇒IC1002	8-759-145-58	Ⓓ μPC4558C
		Diodes
D101–106 D201–206	8-719-815-55	Ⓑ 1S1555
⇒D501, 502	8-719-910-65	Ⓑ HZ6B2L
D503–510 D512–514	8-719-815-55	Ⓑ 1S1555
D601	1-800-822-11	Ⓚ SEL8806
D801–809	⚠ 8-719-200-02	Ⓑ 10E2
D810, 811	8-719-910-15	Ⓑ HZ11B2L
D812, 813	8-719-815-55	Ⓑ 1S1555
D814	8-719-200-02	Ⓑ 10E2
D815	⚠ 8-719-815-55	Ⓑ 1S1555
⇒D816	8-719-910-23	Ⓑ HZ12A3L
D817	⚠ 8-719-815-55	Ⓑ 1S1555
⇒D818	8-719-910-23	Ⓑ HZ12A3L
⇒D819	8-719-910-25	Ⓑ HZ12B2L

- ⇒ : Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.		Description
D821	8-719-200-02	(B)	10E2
D828–833	8-719-815-55	(B)	1S1555
D824			SEL1331G
D825	8-719-311-12	(B)	SEL1112R
D826			SEL1741Y
D827	8-719-101-11	(B)	SR110
⇒D1001	8-719-910-65	(B)	HZ6B2L

COILS

L101, 201	1-407-240-00	(B)	Inductor, variable
L102, 202	1-408-259-00	(B)	15 mH, microinductor
L301, 401	1-408-253-00	(B)	4.7 mH, microinductor
L302, 402	1-408-251-00	(B)	3.3 mH, microinductor
L303, 403	1-408-249-00	(B)	2.2 mH, microinductor
L304, 404	1-408-251-00	(B)	3.3 mH, microinductor

TRANSFORMERS

T301	1-433-213-00	(C)	Osc
T901	⚠1-446-351-00	(M)	Power (AEP, UK model)
	⚠1-446-350-00		Power (US, Canadian model)
	⚠1-446-518-00		Power (E model)

CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted. 50WV or less are not indicated except for electrolytics and tantalum. p: μμF, elect: electrolytic

C102, 202	1-161-315-00	(A)	220p		
C103, 203	1-161-313-00	(A)	150p		
C104, 204	1-161-271-00	(A)	100p		
C105, 205	1-121-419-00	(B)	220	6.3V	elect
C106, 206	1-130-305-00	(B)	0.022	100V	polyethylene
C107, 207	1-121-420-00	(A)	220	10V	elect
C108, 208	1-121-414-00	(A)	100	10V	elect
C109, 209	1-121-392-00	(A)	3.3	25V	elect
C110, 210	1-130-307-00	(B)	0.027	100V	polyethylene
C111, 211	1-161-323-00	(A)	0.001		
C112, 212	1-161-271-00	(A)	100p		
C113, 213	1-161-041-00	(A)	0.0015		
C114, 214	1-121-409-00	(A)	47	16V	elect
C115, 215	1-123-286-00	(B)	0.33	50V	elect
C116, 216	1-108-603-00	(B)	0.1		mylar

• ⇒ : Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

• Circled letters ((A) to (Z)) are applicable to European models only.

Ref. No.	Part No.		Description		
C117, 217	1-108-579-00	(A)	0.01		mylar
C118, 218	1-108-593-00	(A)	0.039		mylar
C119, 219	1-121-651-00	(A)	10	16V	elect
C120, 220	1-121-409-00	(A)	47	16V	elect
C121, 221	1-130-341-00	(B)	0.056	100V	polyethylene
C122, 222	1-130-340-00	(B)	0.018	100V	polyethylene
C123, 223	1-130-339-00	(B)	0.0056	100V	polyethylene
C124, 224	1-123-232-00	(B)	4.7	50V	elect (nonpolarized)
C125, 225	1-121-726-00	(A)	0.47	50V	elect
C126, 226	1-123-228-00	(B)	1	50V	elect (nonpolarized)
C127, 227	1-108-362-00	(B)	0.082		mylar
C128, 228	1-121-414-00	(A)	100	10V	elect
C129, 229 / C130, 230	1-121-651-00	(A)	10	16V	elect
C131, 231	1-121-414-00	(A)	100	10V	elect
C132, 232	1-131-462-00	(B)	0.47	50V	tantalum
C133, 233	1-161-375-00	(A)	0.0022		
C134, 234	1-121-409-00	(A)	47	16V	elect
C135, 235	1-123-286-00	(B)	0.33	50V	elect
C136, 236	1-108-603-00	(B)	0.1		mylar
C137, 237	1-108-579-00	(A)	0.01		mylar
C138, 238	1-108-593-00	(A)	0.039		mylar
C139, 239	1-121-651-00	(A)	10	16V	elect
C140, 240	1-121-409-00	(A)	47	16V	elect
C141, 241	1-130-341-00	(B)	0.056	100V	polyethylene
C142, 242	1-130-340 00	(B)	0.018	100V	polyethylene
C143, 243	1-130-339-00	(B)	0.0056	100V	polyethylene
C144, 244	1-123-232-00	(B)	4.7	50V	elect (nonpolarized)
C145, 245	1-121-651-00	(A)	10	16V	elect
C146, 246	1-161-271-00	(A)	100p		
C147, 247	1-121-392-00	(A)	3.3	25V	elect
C148, 248	1-108-593-00	(A)	0.039		mylar
C149, 249	1-121-414-00	(A)	100	10V	elect
C150, 250	1-123-234-00	(B)	10	50V	elect (nonpolarized)
C151, 251	1-161-041-00	(A)	0.0015		
C152, 252	1-107-172-00	(B)	130p	500V	mica

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Ref. No.	Part No.		Description		
C153, 253	1-107-036-00	(A)	68p	500V	mica
C154, 254	1-141-225-00	(C)	Trimmer		
C155, 255	1-161-272-00	(A)	120p		
C156, 256	1-123-232-00	(B)	4.7	50V	elect (nonpolarized)
C157, 257	1-107-159-00	(B)	33p	500V	mica
C301, 401 / C302, 402	1-121-414-00	(A)	100	10V	elect
C303, 403	1-121-651-00	(A)	10	16V	elect
C304, 404	1-161-323-00	(A)	0.001		
C305, 405	1-123-230-00	(B)	2.2	50V	elect
C306, 406	1-121-912-00	(A)	1	50V	elect
C307, 407	1-121-651-00	(A)	10	16V	elect
C308, 408	1-121-414-00	(A)	100	10V	elect
C309, 409	1-108-589-00	(A)	0.027		mylar
C310, 410	1-108-588-00	(B)	0.024		mylar
C311, 411	1-108-593-00	(A)	0.039		mylar
C312, 412	1-108-589-00	(B)	0.027		mylar
C313, 413 / C314, 414	1-108-587-00	(B)	0.022		mylar
C315, 415	1-108-585-00	(B)	0.018		mylar
C501	1-121-733-00	(B)	470	25V	elect
C502	1-121-414-00	(A)	100	10V	elect
C503	1-121-426-00	(B)	470	16V	elect
C504	1-121-416-00	(B)	100	25V	elect
C505	1-121-414-00	(A)	100	10V	elect
C506	1-121-426-00	(B)	470	16V	elect
C507	1-130-338-00		0.01	630V	polyethylene
C508	1-129-701-00	(A)	0.01	100V	polyethylene
C509	1-130-189-00	(B)	0.018	100V	polyethylene
C510	1-131-218-00	(A)	3.3	35V	tantalum
C511	1-121-726-00	(A)	0.47	50V	elect
C512, 513	1-121-414-00	(A)	100	10V	elect
C514	1-121-391-00	(A)	1	50V	elect
C515	1-161-271-00	(A)	100p		
C516, 517	1-108-561-00	(B)	0.0018		mylar
C519, 520	1-108-587-00	(B)	0.022		mylar
C521	1-121-479-00	(A)	22	16V	elect
C522	1-161-315-00	(A)	220p		
C523	1-108-569-00	(B)	0.0039		mylar
C524	1-121-391-00	(A)	1	50V	elect

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

• Circled letters ((A) to (Z)) are applicable to European models only.

Ref. No.	Part No.		Description		
C525	1-108-593-00	(A)	0.039		mylar
C526, 527	1-121-479-00	(A)	22	16V	elect
C528	1-121-402-00	(B)	33	10V	elect
C529	1-121-450-00	(A)	2.2	50V	elect
C601	1-121-651-00	(A)	10	16V	elect
C602	1-123-354-00	(B)	3.3	50V	elect
C603	1-108-251-00	(B)	0.1		mylar
C604	1-123-306-00	(B)	47	10V	elect
C801, 802	⚠1-123-337-00	(B)	1000	25V	elect
C803, 804	⚠1-123-324-00	(B)	1000	16V	elect
C805	1-123-319-00	(B)	47	16V	elect
C806	1-123-307-00	(A)	100	10V	elect
C807	1-123-329-00	(B)	10	25V	elect
C808	1-123-316-00	(B)	10	16V	elect
C809	1-123-320-00	(B)	100	16V	elect
C810	1-123-328-00	(B)	4.7	25V	elect
C819	1-123-316-00	(B)	10	16V	elect
C820	1-123-352-00	(B)	1	50V	elect
C821	1-108-244-00	(A)	0.033		mylar
C822, 823	1-123-351-00	(B)	0.47	50V	elect
C824	1-123-328-00	(B)	4.7	25V	elect
C825, 826	1-123-351-00	(B)	0.47	50V	elect
C827	1-123-352-00	(B)	1	50V	elect
C828, 829	1-161-263-00	(A)	22p		
C830, 831	1-161-051-00	(A)	0.01		
C832	1-123-319-00	(B)	47	16V	elect
C833, 834	1-161-051-00	(A)	0.01		
C835	1-123-310-00	(B)	470	10V	elect
C836	1-123-353-00	(B)	2.2	50V	elect
C837	1-123-352-00	(B)	1	50V	elect
C839	1-108-579-00	(B)	0.01		mylar
C901, 902	⚠1-130-267-00	(C)	0.022	250V	film (dual type) (AEP, UK model)
C1001, 1002	1-123-306-00	(B)	47	10V	elect
C1003	1-123-316-00	(B)	10	16V	elect
C1004	1-123-354-00	(B)	3.3	50V	elect
C1005	1-130-134-00	(B)	0.082	100V	polyethylene
C1006–1008	1-161-379-00	(A)	0.01		
C1009	1-108-583-00	(A)	0.015		mylar

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted. Refer to the list on page 47 for their part numbers. kΩ: 1000 Ω, MΩ: 1000 kΩ

Ref. No.	Part No.				
R101, 201	1-244-933-00	(A)	330k	½W	carbon
R102, 202	1-244-849-00	(A)	100	½W	carbon
R104, 204	1-244-890-00	(A)	5.1k	½W	carbon
R134, 234	1-244-881-00	(A)	2.2k	½W	carbon
R144, 244	**⚠1-244-849-00**	**(A)**	**100**	**½W**	**carbon**
R149, 249	**⚠1-244-847-00**	**(A)**	**82**	**½W**	**carbon**
R161, 261 162, 262	1-244-881-00	(A)	2.2k	½W	carbon
R164, 264	1-244-913-00	(A)	47k	½W	carbon
R502	⚠1-244-865-00	(A)	470	½W	carbon
R503	⚠1-244-871-00	(A)	820	½W	carbon
R505	⚠1-244-865-00	(A)	470	½W	carbon
R506	⚠1-244-871-00	(A)	820	½W	carbon
R532, 533	⚠1-244-849-00	(A)	100	½W	carbon
R802	⚠1-212-867-00	(A)	27	¼W	fusible
R805	⚠1-211-638-00	(A)	1k	½W	carbon (nonflammable)
R806	⚠1-212-841-00	(B)	2.2	¼W	fusible
R814, 820	⚠1-212-857-00	(A)	10	¼W	fusible
R922	⚠1-246-433-00	(A)	22	¼W	carbon
R1001	1-214-777-00	(A)	100k	¼W	metal oxide (1%)

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

• Circled letters ((A) to (Z)) are applicable to European models only.

Ref. No.	Part No.		Description
RV101, 201	1-224-645-XX	(B)	10k-B, adjustable; playback level
RV102, 202	1-226-235-00	(A)	5k-B, adjustable; REC level CAL
RV103, 203	1-226-140-00	(D)	20k/20k-B, variable; HEADPHONES/LINE OUT
RV104, 204	1-226-235-00	(A)	5k-B, adjustable; level meter
RV105, 205	1-226-560-00	(C)	5k-B, variable; REC LEVEL CAL
RV106, 206	1-224-646-XX	(B)	22k-B, adjustable; record level
RV301, 401	1-226-132-00	(E)	20k/20k-A, variable; REC LEVEL
RV501	1-226-560-00	(C)	5k-B, variable; BIAS CAL
RV502, 503	1-226-232-00	(B)	500-B, adjustable
RV1001	1-226-433-00	(B)	50k-B, adjustable; tape speed

SWITCHES

S101	1-552-907-00	(D)	Slide, MONITOR
S102	1-552-964-00	(D)	Rotary, CALIBRATION
S103	1-552-879-00	(C)	Pushbutton, INPUT SELECT
S104	1-552-880-00	(C)	Slide, DOLBY NR
S105	1-552-878-00	(D)	Slide, EQ
S106	1-552-877-00	(C)	Slide, BIAS
S107	1-552-876-00	(D)	Pushbutton PEAK HOLD RESET
S801	⚠1-552-747-00		Rotary, POWER(US,Canadian model)
	⚠1-552-906-00	(E)	Rotary, POWER (AEP, UK, E model)
S802–808 S809	1-552-919-00	(K)	Block, function included in tape counter
S810, 811	1-552-520-00	(C)	Slide, MEMORY, timer
S812, 813	1-552-268-00	(B)	Slide, accidental-erasure prevention, cassette

JACKS

CNJ101,102 CNJ201,202	1-507-531-00	(C)	LINE IN, LINE OUT (fixed)
CNJ103,203	1-507-526-21	(B)	LINE OUT (variable)
CNJ301	1-507-553-00	(C)	HEADPHONES
CNJ302	1-507-525-00	(D)	MIC

Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

• Circled letters ((A) to (Z)) are applicable to European models only.

Ref. No.	Part No.		Description
			MISCELLANEOUS
CP901	⚠1-231-326-11		Encapsulated Component (US model)
	⚠1-231-341-00	(D)	Encapsulated Component (Canadian, E model)
CNJ901	1-561-293-00	(D)	Socket, 4-p; REMOTE
CNJ902	⚠1-526-528-00		Socket, AC OUTLET (US, Canadian model)
HE	8-825-604-00	(F)	Head, erase; EF206-36
HRP	8-825-723-00	(U)	Conbination Head, record/playback; RPF195-3602
LPF101,201	1-231-388-00	(D)	Filter, low-pass
PL1, 2	1-518-340-71	(B)	Lamp, cassette, meter
PL501,502	1-518-386-00	(B)	Lamp
PM1	1-454-222-11	(D)	Solenoid, brake
PM2	1-454-222-21	(D)	Solenoid, head
M1	X-3564-017-0	(K)	Motor Ass'y, capstan
M2	X-3564-015-0	(I)	Motor Ass'y, reel
⚠1-526-576-23			Voltage Selector (E model)
⚠1-534-777-00		(D)	Cord, power (UK model)
⚠1-534-817-XX		(D)	Cord, power (AEP, E model)
⚠1-534-986-XX			Cord, power (US, Canadian model)
⚠1-551-473-31			Cord, power; parallel-blade plug (E model)

Note: The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

ACCESSORIES AND PACKING MATERIALS

Part No.		Description
X-3701-105-0	(A)	Tip Ass'y, head cleaning
1-551-734-11	(D)	Cord, connection; RK-74A
3-561-142-00		Cushion, upper-front (Canadian model)
3-561-143-00		Cushion, upper-rear (Canadian model)
3-561-144-00		Cushion, bottom-right (Canadian model)
3-561-145-00		Cushion, bottom-left (Canadian model)
3-566-148-00	(B)	Cushion, upper-front (AEP, UK, US, E model)
3-566-149-00	(B)	Cushion, upper-rear (AEP, UK, US, E model)
3-556-150-00	(B)	Cushion, bottom-right (AEP, UK, US, E model)
3-566-151-00	(B)	Cushion, bottom-left (AEP, UK, US, E model)
3-567-247-00	(E)	Carton, for set (AEP, UK, US, E model)
3-567-248-00		Carton, for set (Canadian model)
3-567-250-00		Carton, for remote control RM-50 (E model)
3-701-630-00	(A)	Bag, plastic
3-701-684-11		Card, voltage indication (E model)
3-770-829-11	(E)	Manual, instruction (AEP, UK, E model)
3-770-829-21		Manual, instruction (US model)
3-770-829-21 3-794-537-31		Manual, instruction (Canadian model)
3-793-481-12	(A)	Leaflet
3-793-828-11	(A)	Caution Card, cassette
3-794-559-51		Manual, instruction; remote control (E model)

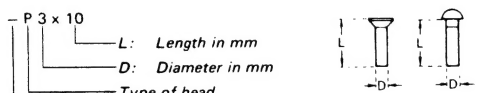
Note: Les composants identifiés par un tramé et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

1/4 WATT CARBON RESISTORS Ⓐ

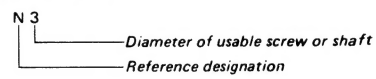
Note: Circled letter Ⓐ is applicable to European models only.

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-576-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-577-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-578-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-579-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-580-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-581-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-582-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-583-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-584-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-585-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-586-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-587-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

Screw:



Nut, Washer, Retaining ring:

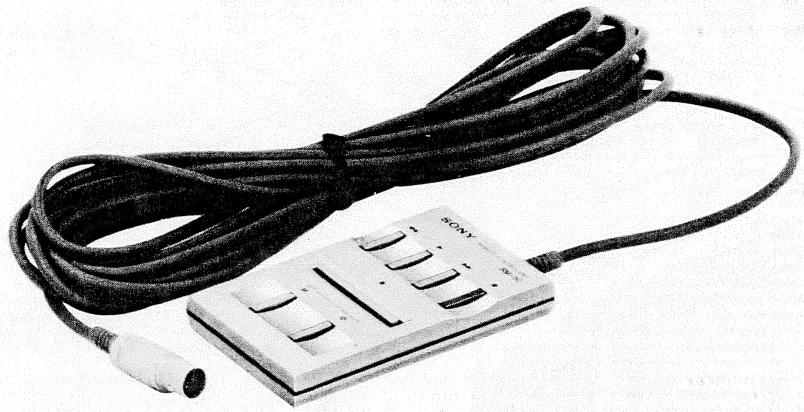


Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

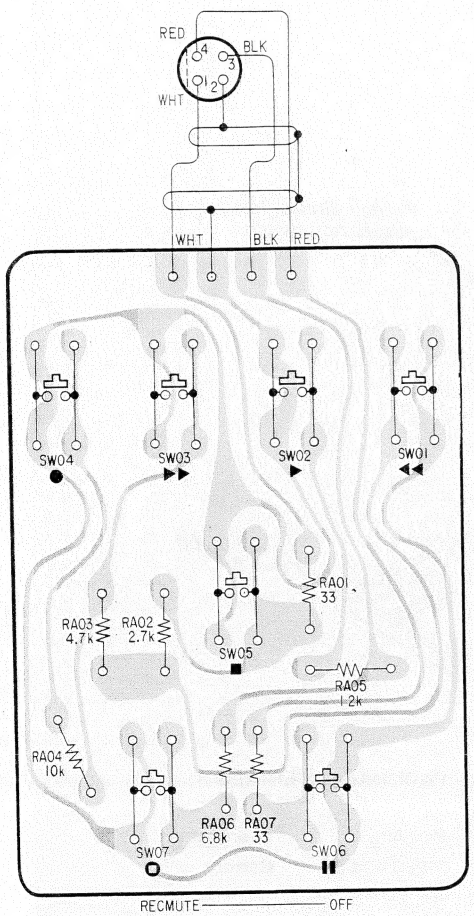
RM-50

E Model



REMOTE CONTROL

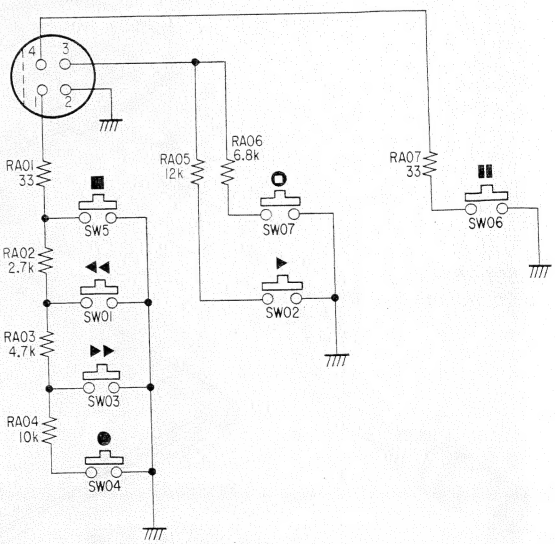
1. MOUNTING DIAGRAM



SPECIFICATIONS

Dimensions:	Approx.	64(w) x 14(h) x 100(d) mm $2\frac{1}{2}$(w) x $\frac{9}{16}$ (h) x $3\frac{15}{16}$ (d) inches
Weight:	Approx.	200g, 7 oz (including cord)
Cord:	Approx.	5m, 16'8"

2. SCHEMATIC DIAGRAM



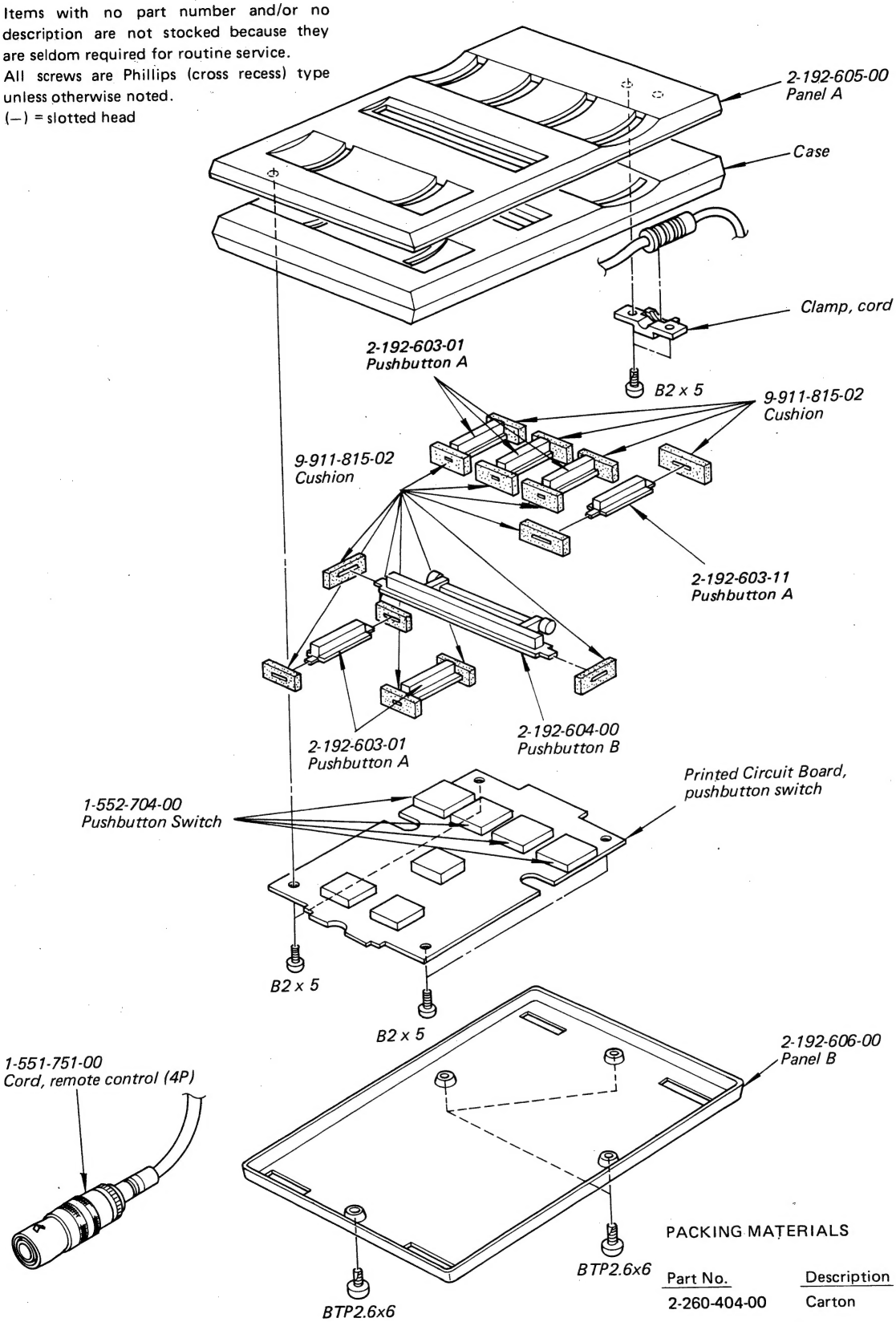
SONY®
SERVICE MANUAL

3. EXPLODED VIEWS

A B C

1 2 3 4 5

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head



PACKING MATERIALS

Part No.	Description
2-260-404-00	Carton

79F02103-2
Printed in Japan